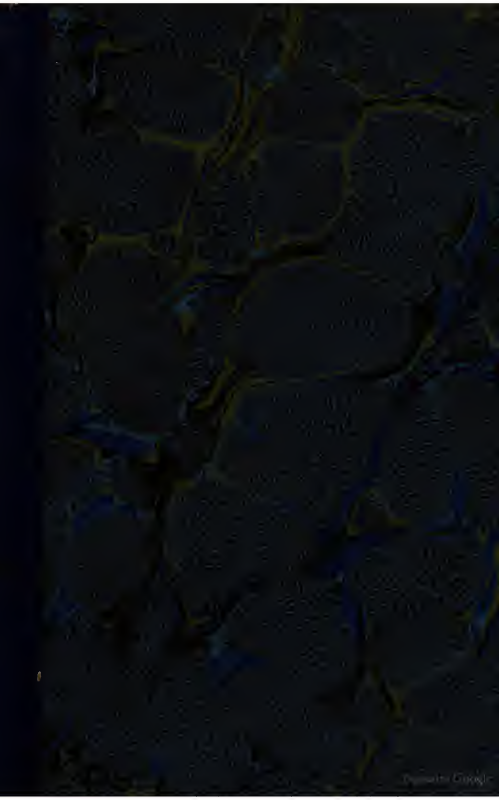




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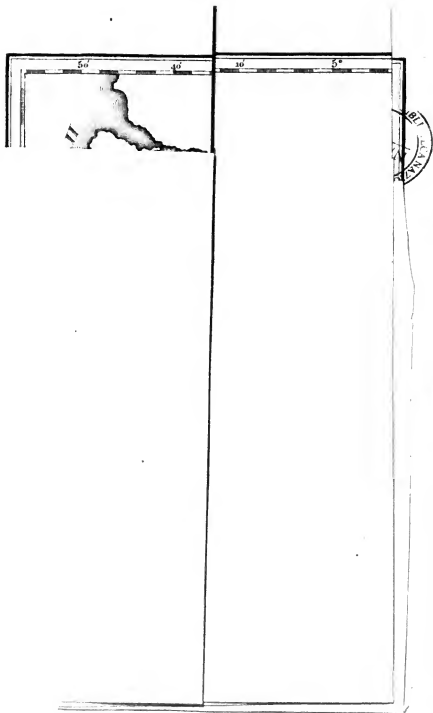
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GENERAL VIEW
OF THE
AGRICULTURE
IN THE
COUNTY OF INVERNESS;
WITH
OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY JAMES ROBERTSON, D.D.
MINISTER AT CALLANDER,
IN THE COUNTY OF PERTH.



DRAWN UP FOR
THE BOARD OF AGRICULTURE,
AND INTERNAL IMPROVEMENT.

QUID FACIAT LETAS SEGESTES, &c.

VIRG.



LONDON:

PRINTED FOR RICHARD PHILLIPS, BRIDGE STREET;
SOLD BY FAULDER & SON, BOND STREET; J. HARDING, ST. JAMES'S
STREET; J. ASPERNE, CORNHILL; BLACK, PARRY, & KINGSBURY,
LEADENHALL STREET; CONSTABLE & CO. OGLE & AIKMAN, &
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DUNDEE; WILSON, PERTH; J. YOUNG, & L. GRANT & CO.
INVERNESS:

BY E. M'MILLAN, BOW STREET, COVENT GARDEN,

1808.

[Price Fourteen Shillings in Boards.]



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THE desire that has been generally expressed, to have the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution to reprint such as appear on the whole fit for publication.

It is proper at the same time to add, that the Board does not consider itself responsible for every statement contained in the Reports thus reprinted, and that it will thankfully acknowledge any additional information which may still be communicated.

N. B. *Letters to the Board, may be addressed to Sir JOHN SINCLAIR, Bart. M.P. the President, No. 32, Sackville-Street, Piccadilly, London.*



PREFACE.

IN submitting this Agricultural Survey to the public, it is my first duty to acknowledge my obligations, for the favourable reception of a former publication, relating to the Husbandry of the County of Perth: and I must confess, that if my Countrymen had been less indulgent at that time, my labours, in the same line of writing, would not have been resumed.

The expectations which I entertained, of meeting with a favourable reception from the Gentlemen and Farmers in the County of Inverness, encouraged me to undertake a Survey of such immense extent; and I have not been disappointed. To them I owe much; and I beg they will do me the additional favour, to accept of my public and most grateful acknowledgments.

Without the friendly communications of persons resident in the different districts, many of the facts must have escaped the notice of a stranger. To corroborate my own veracity, to strengthen the authenticity of these facts, and to give them a higher title to the credit of the reader, they were recorded in my journal, under the names of those persons from whom I re-

ceived them. But for the opinions and reasonings founded on this information, I must take the responsibility, in general, upon myself. Nevertheless there is one ground of forbearance with these reasonings, which I may be permitted to entertain. Although the progress of Nature, and the final result of that progress, are never found to vary, in circumstances which are in all respects similar; yet that uniform similitude so very seldom takes place, in different instances, that a discordance frequently occurs, in the conclusions of different men, on the same points, with regard to such a complicated subject as Agriculture. I can hardly therefore flatter myself, while the premises are so various, in almost every different instance, that my conclusions, on the several branches of rural economy, will give universal satisfaction.

Perhaps my references to the Survey of the County of Perth, may, to some persons, seem too frequent; but the dread of too great a sameness, in treating of the state of two counties, which, in many respects, resemble each other, and perhaps too much anxiety for brevity, deterred me from copying into this Report, some matters, which were deemed of less importance.

I have studiously avoided personalities, even when the conduct of individuals merited reprehension. Errors in the management of land, I was bound to point out: and I have done so, to the best of my judgment; but

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in the discharge of this duty, it was my desire to reclaim, not to expose; to instruct, if possible, not to irritate.

In putting the finishing hand to the Report, I owe much to some of my neighbours, who had the goodness to peruse the Manuscript. The judicious observations of John Buchanan, Esq. of Cambusmore, relative to the Fisheries on the West Coast, and the proper manner of giving them encouragement, besides other matters which he suggested, were so analogous to my own sentiments, that I have for the most part blended them with my own remarks. Sir John M. Murray, Bart. of Lanrick, discovered such intimate acquaintance with the Highlands, and the true interests of that part of the empire, that his opinion is generally subjoined in Notes, which are given in his own words; and some of his shorter remarks are interwoven with the text. The Rev. Patrick Murray, of Kilmadock, favoured me with not a few acute Philological and Agricultural observations, which he was well qualified to make.

After all this solicitude to make a respectable appearance, the present publication not being in the line of my professional studies, I feel all the anxiety returning upon me, which I experienced in my former appeal to the candour of the public. But if this attempt to contribute to the improvement of the Highlands, and the general prosperity of my country, shall
be

be judged, in any degree, conducive to that end, my fatiguing tour in collecting materials for this volume, my pains in compiling it, and my diffidence in laying it before the world, will be compensated in the most ample manner.

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nouncing an erroneous judgment. In the one case, we may do less than justice, by reproaching the inhabitants, for appearances, which they were unable to counteract : and in the other, we do more than justice, by bestowing praise, where the benignity of Nature had been easily stimulated by the energy of man.

But this is not all that ought to be taken into the account. A variety of other circumstances should be duly weighed ; such as the habits of the farmers, the treatment they meet with from the proprietors, their poverty or affluence, their opportunities of receiving agricultural instruction, the state of their lands, by being enclosed or open ; the nature of the climate under which they live, their distance from stimulating manures and from markets, and also the condition of their roads. Without carrying all these, and various other peculiarities in our mind, we cannot pronounce fairly on the characters of any men, as improvers of their soil. We can neither form a just opinion of the cultivation of any country, nor give a correct account of its state to others. Without forming our estimate on proper principles, we could neither do justice to our own understanding, in discerning the truth ; nor make the allowances for the farmers, to which they are justly entitled. This species of exculpatory evidence or apology, in regard to the present state of the agriculture in the Highlands of Scotland, is much stronger, than

than superficial observers are generally disposed to allow. They see what it is, but they inquire not what it had been ; and without knowing its former state, they compare its condition to that of counties with which they are better acquainted. How insensibly may persons from the southern parts of Britain, nay even from the favoured districts of the nearest county, mistake the proper rule of forming a true estimate of the agriculture of some parts of Inverness-shire ! To overlook this criterion is no less uncandid than it is common : wherever the soil and climate of that county are in any degree favourable ; where the proprietors have set examples of cultivation before their tenants, and have given the necessary encouragement to follow these examples, it is pleasant to observe what improvements have been made on the face of the country ; but in some forlorn districts, where the people had none of these aids, improvements of every kind are very far behind, and the appearance of the country very disgusting to a person of any feeling, who takes an interest in the situation of his fellow-creatures.

The attention, which has lately been bestowed by the Legislature on improving the Highlands of Scotland, and meliorating the condition of the lower class of people, is highly meritorious in different points of view. It is honourable to the discernment of these enlightened men, who pro-

jected such great undertakings : it is honourable to the humanity and patriotism of the great national council, who adopted the proposal, and gave it the sanction of legislative authority : and it is honourable to the public spirit of the gentlemen of property, in those countries, where public works of such magnitude are to be carried on, by their entering so fully, and so cordially into measures, which, in the interim, bring such a load of expense upon themselves. Too much praise cannot be attributed to every class of men, who have taken an interest in this business, in every stage of its progress and in all its bearings ; and it is not only wished, but expected by every friend to the prosperity of his country, that this may be the prelude of other improvements in the condition of the Highlands, and an earnest of the paternal regard of a beneficent Sovereign, and of the attention of his Government, to that valuable race of men who inhabit these regions.

It cannot have escaped the observation of any man, who is acquainted with the history of his country, however ignorant he may be of the local manners of the Highlanders of Scotland, that it is neither easy for government to over-rate the value of these men, nor to be more attentive to their happiness, than they have a just claim to expect from their country. They have uniformly proved themselves to be warm in their attachments, true to the cause they espouse, steady in
their

their engagements, patient under many privations, vigorous in their constitution, inured to toil, active in their motions, indefatigable in exertion, and fearless in the hour of danger.

Descended, or conceiving themselves to be descended, from some renowned Leader of their tribe, and counting kindred with the Chieftain of their own time, they feel the impulse of honour, natural to such blood, and becoming such connexion; and disdain to bring a stain upon their Clan, by bringing a stain upon themselves. This pride of clan-ship affects their manners, their habits, their conversation, their sentiments, their address, and their prospects in life. It inspires them with a certain elevation of mind, which is perhaps unfriendly to the drudgery of continued labour, while untutored by experience or not supported by clear views of interest. It gives them however consequence in their own eyes, and they aspire to obtain the same consequence in the opinion of others.

The desire of being well informed gives them an inquisitive turn, which is often censured by strangers. While one of the vulgar, in many parts of the low country that I could name, can hardly tell you the name of his laird or of his house; while he cannot direct you with certainty to the proper road, or mention the number of miles to places not very distant from his door, a Highlander of the same rank, can trace the pedi-

gree of his chieftain for many generations, the connexions of his family in various countries, and very probably the time, when his own progenitors came off the family. Ask him the way and the distance; to a person in the habit of a gentleman, he will describe the road, for a whole day's journey, stages, miles and all; but he must be told something in return, to give him consequence among his neighbours, as a person of intelligence and information.

Long had the jealousy of government looked upon these men with distrust. They had been dreaded, insulted, injured, from the revolution until the eve of the first American war, when the comprehensive mind of the first Earl of Chatham discovered their value, and caressed them.

Although the remains of the feudal system were legally abolished in 1748, yet the spirit of that institution retained its full force in the Highlands of Scotland for many years after that period. That great man knew the Highlanders were still attached to their Chiefs, either by consanguinity, or gratitude, or affection, or by the combined and irresistible influence of these and every other tie, which endear men to each other. He accordingly employed the heads of their tribes in the royal army; and the different Clans followed the standards, which their fathers had attended in a very different cause: yet still they were the ensigns of their tribe; and their Chieftains were their leaders.

leaders. His cause was theirs. Their reasoning went no farther. Their expertness in genealogy enabled them to distinguish betwixt the stem and its branches, which, at two periods, had been the cause of their unwise resistance ; while, on the other hand, abstract political questions about hereditary right and the interpretation of acts of parliament, were despised as beyond their reach, or swallowed up in the veneration they had for the Chiefs of their tribes.

I appeal to the history of every war in which we have been engaged since that period, as evidence of the unshaken loyalty and of the undaunted bravery of that people ; and what ought to claim particular attention from the Legislature at this day, I appeal to the great numbers that were employed in the army, no less than to their prowess.

Thus the policy of an enlightened government has of late trusted them ; and the Highlanders have proved themselves, on all occasions, worthy of that confidence. They have been regularly called forth in the time of need ; with alacrity they obeyed the voice of their country, and shed their blood in streams in its defence. They have uniformly manifested the same zeal, the same firmness and the same magnanimity, in a national cause, which they had formerly shown in another. They have the same energy, but the object is changed ; the same martial spirit in its

influence, but different in its direction. They are this moment the most steady friends of the Crown, having their souls warmed with the purest sentiments of loyalty. Such are the Highlanders of our time; and such they have been growing more and more during these forty or fifty years. Every man, who is acquainted with the state of this country, knows that there is not a feature strained; but that this picture is far short of the original.

How are these people to be treated? Is Government bound to do any thing for them, or is it not? Are Kings to be nursing fathers, and Queens to be nursing mothers, according to the dictates of the highest authority regarded by mankind? Is it not enough that upwards of an hundred thousand of these people have already been under the necessity of leaving their country, never to return? Must the remainder be compelled to follow that example? Is there no remedy to prevent this voluntary exile of its inhabitants? Are the Highlands to be depopulated? Is this limb of the empire to be abandoned as useless, when threatened with a mortal disease? Does the State owe no paternal regard to these men? Is it not a debt of gratitude due by their country, to cherish them? Is it not the soundest policy to nurse and to rear that race of people? Have they not conferred on the empire the most important obligations; and is there no return to be

be made, no duty to be performed, in requiting these obligations? Are all our wars at an end? Is there to be no future struggle to ward off danger, or to maintain our rank in the scale of nations? Is there no such virtue in the ethics of this country, as public or national gratitude? Is gratitude confined to individuals alone, to inferiors only, or to persons of the same rank in life? Does this amiable virtue, which has always been thought to require no law to recommend it but its own native excellence, rise no higher among men? Is no return, no thankfulness, no recompense, due from the great to the little, from the high to the low, for the most substantial favours? Is there no regard to be paid to their interest, no good offices due from the governing to the governed, for all that these people have done, and are still willing to undergo, in support of the glory and prosperity of Britain? Yes, surely. The national gratitude is always awake. Our Admirals and our Generals frequently receive the public thanks of their grateful country, are enriched by the bounty of the Senate, and ennobled by the gratitude of their Sovereign; and are not the men of meaner condition and of lower rank, who enabled these leaders to conquer, deserving of some respectful mark of attention, of the same nature, though not in the same degree, which may be suitable

to

to their conditions and circumstances in life? That they are, none, it is presumed, will deny. The national principle of retribution in good offices, is the same in both cases, and the merit of having earned them, is similar, though of a different amount; and although the separate merit of every individual in the ranks, cannot amount to that of their commander; yet the valorous deeds of a whole army are worthy of notice, and the meritorious earnings of a whole million of people, the supposed population of the Highlands of Scotland, *while entire*, deserve to be rewarded by some mark of national beneficence. The achievements of such a body of brave, loyal men, which are already upon record in the annals of their country, and the future deeds of valour, of which they are capable, in its defence, if they remain in Britain, are objects of the last importance. There can be no apology for treating that people with neglect; no excuse for the Government of this country, for suffering them to be lost to Britain. We must be regarded by the world, not only as devoid of compassion, and strangers to humanity, but as guilty of national ingratitude, indifferent to our own prosperity, and politically blind, unless the wings of protection be spread over them, and every nerve strained to render emigration unnecessary, and prevent their removal to another country. But
this

this can only be done by conciliating their affections, and by providing in good earnest the means of their comfort and happiness at home.

What is to be done to prevent the Highlands from becoming a desert? What remedy ought to be applied to ward off in time this national calamity, which may soon become irremediable? How are these mountaineers to be retained in their own country, and that race of people preserved from becoming extinct in Britain?

To attempt a full and satisfactory answer to these questions *in this place*, would lead into a discussion unsuitable to the length of an Introduction, and anticipate some of the observations that ought to be appropriated to certain sections of the following Report. But if my abilities were equal to my willingness of doing justice to this part of my subject, the antidotes to be proposed, as preventives of emigration, will, it is hoped, not only induce the Highlanders to remain in their own country, but will promote their prosperity, and ensure their comfort, beyond that of any former age.

PRELIMINARY OBSERVATIONS,

PECULIAR TO

INVERNESS-SHIRE.

1. There is not much of what may be called low land, in the county to which this Report refers. When one takes his station on the parapet of Fort George, or, walking round the batteries, takes a view of all within his horizon; besides what appears of other counties, his attention is arrested by the prospect westward within this county, where a strath of fine country presents itself, stretching along the south side of the Murray and Beaully Firths; the town of Inverness, the capital of the county, with its shipping at the mouth of the river, or sailing to and from that port; the villages of the fishermen along the coast; the seats of gentlemen, glittering through magnificent plantations of aged trees; the fields regularly enclosed, and variegated by the diversified appearance of white and green crops, or fallow; venerable old castles, the fortresses of times that are past, and the habitations of Chieftains, whose names are renowned in the page of history as the pride of their country and the terror of its enemies; the vast forests of countless trees on the brow of every hill, planted by the present or last generation of landed gentlemen, which afford shelter to the lower grounds; and the lofty mountains, on the west, which reach the clouds; and bound the prospect in that direction;—These, and various other points

of beauty and grandeur, contemplated from this station, and illustrated by the judicious remarks of the Governor, the Hon. James Stewart, compensate, in a great measure, to a sentimental traveller, the fatigue of a dreary journey through the midland roads, which lead northward to this delightful district.

2. Beyond the town of Inverness, and a few miles west from the ferry of Kessack, which by an isthmus separates the Murray Firth from that of Beauly, there is a pleasant spot, called the Aird. From the eminence of Kirkhill, near to the house of Major Fraser of Newton, you stand in the centre of one of the most enchanting prospects in the Highlands of Scotland. In natural beauty, wood and water, hill and dale, richness of soil, both clay and loam, elegance of buildings, spirit of cultivation, orchards, enclosures, and variety of crops, nothing in any country can exceed the Aird.

On the north flows the river Beauly, a placid, winding, majestic stream, which discharges itself into a Firth of the same name, forming the boundary between the counties of Ross and Inverness. The mouldering ruins of the monastery of Beauly, are situated on the fertile brink of this sheet of water; a select spot, the beauty of which may be inferred from the French name, which signifies *a fine place*. The gentlemen's houses on the Ross-shire side of the Firth, rising in succession from the shore, on a gentle acclivity of country, with their well-dressed lawns, afford a beautiful variety in that direction.

Towards the east, the prospect is boundless, along the Firths by the tract of Inverness and Fort George, to the German Ocean: while near at hand, the sea
has

has left several hundred acres of rich slimy ground, which is overflowed every tide, to stimulate the enterprise, and reward the industry, of future improvers, who, by proper embankments, may enrich themselves and their country.

On the south, the beautiful place of Moniac lies snug and warm under the covert of extensive and thriving plantations. To the south-west Belladrum, in the highest state of agriculture, rears its head,—a princely mansion, where every inch of ground is turned to the best account. But this place and Beaufort are best seen from the western entry of the Aird, and merit a particular description in another place. It is not meant at present to encroach on the general topography of the county, but only to look around and refresh the eye, and tell the reader, or convince him, if I can, that the whole of Inverness-shire is not that dreary, gloomy, and barren country, which some persons may suppose.

3. The county under review is distinguished from other parts of Scotland in a variety of respects. Immense as the extent of the hills may seem to be, they were mostly covered in former times, about half way from the base to the top, with natural firs; and many of the lower moors in like manner. There is complete evidence of this fact, from the large roots of fir trees found matted together, in all the mossy ground in these situations, which the inhabitants dig up from year to year for fuel, not only in this county, but in those parts of the shires of Perth, Argyle, Elgin, Banff, Aberdeen, and Angus, which are adjacent to that of Inverness. Stocks of the same species of timber are found in these places in similar circumstances.

If

If the name of *Sylva Caledonia*, as we may believe, was given by the Romans to the largest wood in Scotland, by way of distinction, there is at least a strong probability, that an extent of growing pine, besides other wood, which covered the whole hills and much of the low ground of Inverness-shire, and such great tracts of so many other contiguous counties, and what may be supposed to have reached farther north, would appear to them deserving that distinguished appellation. Birch, which mounts to the very brow of a hill, and alder, which covets swamps and richer ground, are often interspersed with the fir; so that, in all likelihood, much more surface in these regions had been covered with wood, than what now appears occupied by growing firs or by decayed fir-stocks. The resinous quality of the fir preserves it for any length of time from corruption, while the other kinds fall rapidly into a state of decomposition, and mix with the soil, unless they are buried deep in moss and excluded from air.

This formidable barrier, which reached from sea to sea, and of whose breadth no stranger, by land, could form any conception, must have appalled all invaders from the south. The frightened Romans would therefore magnify this immense forest, which, for any thing that is known, they never durst penetrate in any direction.

There are very venerable remains of this wood still growing. No less than 15,000 acres of natural firs in Strathspey; on the estates of the Duke of Gordon, and Mr. Grant, of Rothiemarchus; a long tract of country on Colonel Cameron of Lochiel's property, at the side of Locharknig; a similar district in Glengary, on Colonel McDonnell's estate; the same on the Glenmeriston

riston lands; besides the large fir wood of Strathglas, the property of Mr. Chisholm of Chisholm. These gentlemen derive a considerable revenue from their woods, by floating the timber down to the sea, both east and west.

It was asserted in the Report of the county of Perth, as a peculiar feature of that part of Scotland, that it contained more oak-copse than all the rest of North Britain: I venture now to state, that the shire of Inverness contains more natural firs, than all our other counties.

4. What the Board of Agriculture has already done, is a presage of what they are desirous to do, for the good of their country. Their industry has been unremitted; their activity has surmounted many difficulties; their wisdom, in devising the best plans of improvement, and their perseverance in pursuing them, demonstrate the utility of such an institution.

We have Chambers of Commerce, and Conventions of Burghs, for the benefit of Trade; we have Trustees for the encouragement of Manufactures and Fisheries; and various Societies established by charters from the Crown, for investigating the Antiquities of the country, for the improvement of general Literature, and for promoting the prosperity of the Highlands, besides some others of inferior note, which embrace different objects, all tending to promote the good of the empire. It is astonishing that in these enlightened times, and among a discerning enterprising people, the establishment of a Board of Agriculture for the cultivation of our soil, and meliorating the breeds of our cattle, a national object of such magnitude, should have been so long delayed. The

cause of this delay may have arisen from this circumstance: until the proprietors of land thought seriously of improving their estates, and of putting their own hand, as it were, to the plough, it was in vain to expect that any substantial or enlarged improvement of the soil was to take its rise among the peasantry. In my own remembrance, it was thought a most extraordinary occurrence, and an undertaking which none but gentlemen of fortune could attempt, when a solitary spot of a few acres, sown with red clover and rye-grass, made its appearance in a district of country thirty miles long, closely inhabited, and all under tillage. But the times are changed. Most of the gentlemen now are improvers themselves; and their tenants follow their example.

Under the auspices of the Board of Agriculture, the state of the country will be brought to light, and the most approved modes of culture not only pointed out to the gentlemen, but disseminated among the tenantry in every corner of the island. Whoever can discern, that incalculable advantages may be derived from the labours of this Board, and would wish to see their hands strengthened in their arduous duty, cannot fail also to wish to see their funds increased. This is the desire of thousands; and sooner or later this desire will be accomplished. What great sums have been already expended for the religious instruction of the Highlands, and for promoting the domestic industry of the inhabitants! Why should the agricultural improvement of the people be neglected? Why should not the allowance to the Board be increased, in proportion to the importance of those objects they have in view? The whole benefit would redound to the public: the labour alone is theirs.

It

It does not often happen, that this or any other government lays out money, which returns with interest; but here the return will be double the capital; and all that capital and increase will flow ultimately into the national purse. The soil of Britain may be rendered, by the exertions of the Board, productive of human food to a degree at present unknown: and that increase of subsistence will encourage an increase of population in the same proportion; and the useful labour of that increased population will most assuredly augment the national revenue, no less than the national strength.

In a letter which I had lately the honour to receive from that enlightened and patriotic statesman, George Dempster, Esq. of Dunnichen, who had served his country with increasing reputation in several parliaments, I find the following passage. After deploring the depopulation of the Highlands, he says,—“ In contemplating this subject, one is sometimes tempted to form Utopian wishes. I wish, after the forfeited estates were restored, the Board for improving the Highlands had been continued, and some fund put at its disposal, for the purposes of preserving the people, improving the soil, and increasing the woods of that immense portion of Great Britain. The Board was composed of public spirited noblemen and gentlemen, acting without fee or reward, except a salary to the secretary.”

5. Were the revenues of the Board of Agriculture commensurate to the schemes of public utility which they might have in view, it is not easy to enumerate all the variety of different objects that may appear worthy of their attention, or to anticipate the amount

of the obligations they may confer on their country. Besides the improvement of the soil, and beautifying the face of the country, they might apply their mind to the nature of the exports both in quality and in kind, from the Highland districts—the wool, the hides, the bark, the lead, the yarn, and many other materials, some entirely raw and others half wrought, which are sold by the natives at a low price, and sent from the northern counties to other places to be manufactured. These are afterwards bought back, at a much higher price, by those who sold them, which tends to beggar the country where the articles were originally produced.

Our imports both in the Highlands and elsewhere might claim their attention, and various expedients might be pointed out, to lessen the quantity by means of internal industry, or the cheapest and best markets pointed out for such as the country can neither produce, nor conveniently want. But the present funds of the Board being inadequate to those purposes, their views must be limited by their power; and the increase of their ability depends on the generosity and patriotism of the public.

6. Independent of the powerful effect, which the prosecution of the fisheries on the west coast of this and the other northern counties, may have as a collateral remedy against emigration, it is my duty to point out the influence which this measure will not fail to have, in providing for the protection of the country in time of war. The warlike disposition of the inhabitants of these countries hath been glanced at above; but little or no notice has been taken of their maritime situation, nor of their qualifications as sailors.

sailors. Their constant habits, from their earliest years, of a sea-faring life, and their intrepidity in braving the dangers of the ocean, in the midst of tempests, of shoals, of currents, of rocks, of eddy winds and contrary tides, and all the other perils, which would make a mere landman shrink into insignificance, cannot be estimated too highly. Let them be possessed of all the aversion from the drudgery of labour, which those, who despise or undervalue them, may allege; yet their various qualifications as expert seamen, ought to endear them to Britain, and make every man, who wishes to preserve the independence, and promote the prosperity of his country, desirous of preserving them, and of seeing them caressed and employed.

Cast your eye along the shores of the continental part of Scotland; look round the multitude of islands, which, like another Archipelago, are scattered along the whole west coast. Trace the winding bays and creeks, and the long arms of mediterranean seas, which penetrate into the heart of the country. Measure all this length of shore, and be convinced from ocular demonstration, that there is no part of Britain better calculated for nursing a numerous breed of sailors, the most daring and dexterous which can be found in any country.

If the population of these provinces, which are termed the Highlands, be one million; if one half of these be males; if, again, one half of these be men, acquainted with the sea—here you have two hundred and fifty thousand males of all ages, who have either been in their youth, or now are, or, when grown up, shall be, intrepid sailors. Let one half of these be deducted, as too young, or superannuated, and there

remains one hundred and twenty-five thousand in the Highlands, fit, at all times, as things now stand, for immediate service on board His Majesty's fleet, upon receiving proper encouragement. Nevertheless, the matter cannot remain in this situation. Either the Highlands will be depopulated, if they are neglected, or the numbers of the people may be increased; nay, I expect to demonstrate before this Report is brought to a close, that their population may be at least doubled, and better fed and better lodged, by proper attention, than they are at present. The national advantages which a maritime state is able to derive from subjects duly bred to the sea, are so great and so manifest, that it would be wasting time to enter largely upon that subject. Whoever sees not the truth of this at a glance, or would require it to be established by proof, is blind to the interest of his country, and ignorant of the history of the world. What was it that raised the Tyrians of old to such eminence and wealth? Their sailors. What was it that enabled the Carthaginians so long to rival Rome in her best days? Their sailors. What was it that brought the paltry kingdom of Portugal, during a certain period, to such a rank in the scale of nations, and enabled the Portuguese to colonize great and distant countries? Their sailors. What raised the fishing villages of the Dutch, in the midst of marshes and swamps, to be great and flourishing cities? Their trade. But what gave them that trade and wealth, and enabled them, about a century and a half ago, haughtily to assert the empire of the ocean? Their fishermen becoming sailors. What has raised our own country to a pitch of glory and power, unexampled in all former ages? Our Navy. What will secure our prosperity, our independence, our very existence;

istence? Our Navy. What will enable us to transmit our privileges to our children? Our Navy. Let Europe, *if it must happen*, be turned upside down; but let my country dread no foe, while she is wise enough to be adding to her naval strength, to be cherishing her sailors, and keeping her fostering arms around every nursery of future seamen.

Suppose that the proprietors in the Highlands should be averse to establish fishing villages, in proper stations and under proper regulations, upon their estates; but I cannot suppose it: yet let us suppose that any of them would be unwilling to do so; is it not competent for Government to say, there is a station on your property fit for a village, with suitable accommodations for fishermen; either establish a village there yourself, or dispose of a piece of ground in that place to the state, according to the valuation of a jury, and we shall colonize it? It is not the province of the Writer of an Agricultural Report to give judgment between the public and a private proprietor, in this or any other matter. Absolute power must reside somewhere in every effective government, and it must be understood to be generally competent for that government to provide for its own preservation, by the exercise of this power, with or without instances to exemplify every supposable case. But the analogy in the matter alluded to is very nearly allied, if not exactly similar, to what happens almost every session of parliament, in regulating the embellishment or enlargement of cities, in changing the line of roads, and in directing the course of canals.

There is no man in Britain who is not probably of opinion, that he has enough of taxes to pay. Yet

notwithstanding their amount, I am confident that every friend of his country would prefer being taxed in a fair proportion of his wealth, to enable Government to take measures for securing the services of double the present number of seamen for the Royal Navy, from the Highlands of Scotland and elsewhere. Better to be taxed to the last shilling, than suffer our fleets to be unmanned, our shores insulted, or our houses pillaged, by any rival power.

7. The county of Inverness is the first that one meets, going northward, which reaches from sea to sea. It comprehends a considerable tract of shore on the German Ocean; and its shores on the Atlantic alone, including the islands, are more extensive than the whole sea-coast of any of our other counties, Argyleshire alone excepted.

When the Caledonian Canal is finished, the conveniences for trade which shall then pertain to the shire of Inverness, no man at this day can estimate by speculation: they can only be understood in their full extent when brought to the test of experience. Hence the propriety of losing no time in preparing for this event, by establishing villages, as alluded to formerly, along the navigable coast, that the people may avail themselves of these favourable circumstances when they occur, and have the means in their power of providing for themselves and families, and of being ultimately useful to the state.

It is generally observed, that population increases faster in fishing-towns than in any other place, owing to the nature and abundance of their food. Those who live upon butcher meat are least of all prolific; and

and persons living on milk and vegetables, or farinaceous food, not so prolific as the former, but more so than the latter.

Wherever mankind derive their principal subsistence from the sea, we find them multiply more rapidly than in any inland district of the same country. By casting our eye along the east coast of Scotland, what a multitude of populous villages ! what swarms of children ! One half of the inhabitants of that whole side of the country seem to be collected within a mile of the sea-shore ; and yet perhaps not one half of the inhabitants in the smaller towns could be subsisted by all the grain consumed in them ; the corn raised in the country adjacent, being in a great measure carried coastways to some other market. May a benevolent mind indulge the hope, and anticipate the event, that in some future day Scotland shall have its fishing villages, though perhaps not in such numbers, on the west coast, as are now on the east coast, and that these will teem with people.

In place of going into any farther detail of general observations upon national or local subjects, which seem to be of importance sufficient to claim the attention of the public, I take the liberty to refer to some remarks of that nature, prefixed to the Agricultural Report of Perthshire ; such as these—That the example of proprietors who are successful improvers, will in due time be followed by the tenantry : that in all cases industry is the parent of wealth : that all improvements are generally progressive from east to west : that the prosperity of a nation depends on the labour of its inhabitants, and the number of those who are usefully employed : that landed property is nearly allied to a raw material in the hands of a manufacturer, which

which being a dead stock, requires another stock to put it in motion, before it can be brought to its ultimate value; hence the necessity and importance of agriculture: that the knowledge of agriculture is more speedily acquired and more safely practised, when obtained by example and learned by experience, than by theoretical reasoning upon abstract principles: and that the insular situation of Britain calls loudly upon every man of reflection, in every rank of life, to pay attention to the cultivation of the ground, for supporting the increasing population of the country; because, if ever we lose our envied superiority at sea (a misfortune deeply to be deplored), not only shall our trade be lost, and the sinews of our power be cut, but every person in Britain who cannot find subsistence at home, may be completely starved by the vigilance of a superior hostile navy.

TOPOGRAPHICAL DESCRIPTION

OF

INVERNESS-SHIRE.

UNLESS one were to enter the county of Inverness by the coast of the German Ocean, the aspect in any other line of approach is rudely grand and naturally forbidding. The dark blue mountains piled upon one another, the immense chains of these, with hardly an opening to afford access between them from the south or west, form a barrier, which, to a stranger, requires a certain degree of fortitude to attempt, and of enterprise to surmount. To see poles set up by the side of the public road in these defiles, as beacons to guide the weary traveller in exploring his way, when the fog is so thick that he cannot see, or the snow so deep, that the proper path is concealed from view, is a proof of the danger to be often dreaded in entering this part of the kingdom. These mountains stretch across the island, and lie parallel to every valley, rising like immense walls on both its sides, while the inhabited country sinks deep between them, with a lake or rapid river flowing in the centre. No sooner is one defile passed over, than another range of hills comes into view, which conceal in their bosom another defile, and a strath of inhabited country, that require equal labour and equal peril in being left behind. Over the whole county the same appearance

pearance of lofty mountains, in constant succession, seems to intercept the traveller's progress, except when he descends along the tract of a valley, and follows the course of a river, or the windings of a lake, between two ranges of heath-clad hills or towering rocks, whose base is generally covered with wood.

There are two Highland roads into the county of Inverness. I entered by the west road, and returned by the east. Going from the county of Perth to Fort William, a part of Argyleshire must be passed through, between Tyndrom and Ballachulish. In this ride, which is an ordinary day's journey, the Black Mount, the inn called the King's House, and the valley of Glenco, are interesting objects, which arrest a traveller's attention. The Black Mount has been covered, at least all round the base, with a forest of natural firs. The remains of this wood are still growing at Inveroran. The soil is a crust of moss, formed by the deciduous parts, or the leaves of fir and heath, upon a subsoil of gravel or deep peat earth. The stocks of the old trees are so weather-beaten by the storms, that their bleached tops resemble human skulls strewed on the ground. On the south are high hills, affording good pasture for sheep. On the north is a boundless flat of deep moss, reaching from Glenlyon and Rannoch, on the east, to the braes of Badenoch on the north, and westward to the confines of Lochaber, at Lochtreig. There is little doubt of this being the most extensive field of moss in Britain; in which numberless little lakes are interspersed, full of trouts of various kinds; and in some of these are islands, with tufts of trees. In the islands the deer take shelter during day-light, and roam about in quest of food whenever the dark-

ness makes it safe for them to quit their cover. They are hunted by carrying a small boat to the place, which happens but seldom, by means of which a person or two enter the islands alternately, to alarm the deer; and they are shot by the marksmen while swimming to the shore. In winter, when the lakes are covered with ice, the deer are killed by common shepherd-dogs, before they can escape over the ice. Their hoofs are so pointed and narrow, and yet blunt, that they stagger, and stumble, and fall. The faster they attempt to run, the more easily are they overturned, and the sooner do they become a prey to the most insignificant enemy.

On approaching the King's House inn, that steep ascent, with its manifold traverses, called the Devil's Staircase, appears in full view in the west. This path is now deserted, and the public road is turned towards the left, down the valley of Glenco, which forms a long circuitous line to Fort William.

There is not perhaps a place in Britain more awfully wild than Glenco*. This valley is narrow, naked, deep, and gloomy, which the heights on both sides render more awfully striking. The mountains stand beside one another, like immense cones of bare and rugged rock, some of which are 3000 feet high; very steep, with little verdure, and but few shrubs. The soil has been washed down by the deluges of thunder showers, which break on the summit; and where the soil is worn off by torrents, the rocks themselves are loosened, and tumble down in fragments,

* Called Glencoan, in the language of the country, which signifies a valley very much confined; nor can any name be more descriptive of a place.

which

which in some places cover several acres of the narrow flat below.

No wonder although the sublime genius and fertile imagination of Ossian conceived that the spirits of departed heroes inhabited the clouds which rest on the tops of these pyramids, and being shrouded from mortal eyes in such magnificent robes, did cast down a glance, piercing like a sun-beam, on their posterity. Every mountain that surrounds Glenco, and every valley which forms any opening on either side, have Fingalian names, by which they were distinguished before Macpherson was born, and which they will retain while the language of Ossian shall exist in the country; and notwithstanding the sceptical snarling of any critic ignorant of the Highlands, will transmit the fame of Fingal's victories, and Ossian's songs, to future ages.

After travelling some miles down the glen, the eye is refreshed by the beauties of Inverco, which no doubt are heightened by contrast. The foot of this glen, which had hitherto been dreary and frowning, all of a sudden assumes a pleasant aspect, by the winding limpid stream, the variety of wood which covers the verdant banks, the appearance of cultivation in the fields, the snugness of the laird's house, completely sheltered from the north, and situated at the extremity of a bay of the sea which opens to the meridian sun.

A few miles below Inverco, and on the left side of Lochleven, that arm of the sea narrows into a strait, named *Calas ic Phatric** (*the Strait of the Son of Patrick*),

* The tradition concerning this name is, that the son of the King of Denmark

Patrick), which is the ferry at this place from the county of Argyle into that of Inverness. At a short distance on the road to Fort William, there is another narrow ferry on the left, into Ardgowr, called *Corran*, which is descriptive of the rapidity of the current at this place, between Lochiel and the ocean.

Beyond Corran the country is little else than lofty mountains*, rising on this branch of the sea, whose base in several places hardly affords room for the public road; an appearance which is frequently presented to a traveller in the West Highlands of Scotland. At Fort William the eye is however gratified by the view of a town where the houses are covered with blue slate, a regular street, and the garrison at the north end†.

The old castle of Inverlochy, which is situated at the distance of a few miles from the present fort and town, on the north-east bank of the river of that name, is such a singular fabric, for size, antiquity, and construction, as to merit a place among the antiquities of the county; Dunghairdghall, another strong-hold in this neighbourhood, which is still more ancient, is of the same nature; Tor-Castle, on a rock in the river Lochy; together with any account I can give of that singular phenomenon, the parallel roads of Glenroy, must be reserved for the same Section, to prevent this article from becoming tiresome by its length.

Denmark was drowned at this ferry, by his vessel, during ebb-tide, having struck upon a large stone which is near the shore on the east side; from whom it is called the *Strait of the Son of Patrick*. The straits in the Highlands are generally termed *Càlās*, which is also the name of a famous strait between Britain and the Continent of Europe.

* And among the rest, Benevis, 4370 feet high.

† For a more full account of Fort William, of the town of Inverness, and the villages, see Chap. III. Sect. 3.

To catch the leading features, and form some conception of this western part of the county of Inverness, one must suppose a deep valley beginning at Fort William, and stretching across the whole county, nearly in the middle, from south-west to north-east. This valley has a range of lofty mountains on both sides. The rivers, flowing between the openings of these parallel mountains, meet one another, and discharge their streams into the bottom of the valley, as a common reservoir, and feed Loch Lochy, which falls westward, and Loch Oich and Loch Ness, which fall north-east. But after we penetrate back through these parallel ranges of mountains for several miles, either to the right or to the left hand, we find other rivers, which flow in a direction opposite to the former, and take their course away from the great valley of the canal. Two large folios half open, set on their face beside one another on a table, will furnish a kind of model, which shall give a more distinct idea than any description of mine.

This range of mountainous ground between the great valley and the Atlantic, is the highest and wildest of all the forbidding surface in the county, and has got the name of the *rough bounds*. It extends from the head of Moidart, which joins the county of Argyle, to Glensheil in Ross-shire, a distance of 70 miles or more. There descend from this general range of elevated land, five or six lines of lower, but very rugged ground, which penetrate into the Atlantic, and form so many bold promontories on that shore. From these general outlines of the geography of this part of the county, there are some exceptions, which shall be taken notice of in their place.

Lochiel,

Lochiel*, on whose northern shore Fort William and its village are set down; penetrates twelve miles west; in addition to the distance of ten miles more from Corran to that village. From the head of Lochiel, the waters flow three miles eastward into that arm of the sea. Going down the valley of Arasaig, you pass the end of Lóchseil, which falls southward into Morven, is twelve miles long; and divides Ardgowr from Moidart. Into Moidart there runs an arm of the sea, called Loch Moidart, where it is said the last standard of rebellion in Britain made its first appearance. May it be the last for ever seen in my country! On the north of Moidart a narrow lake of fresh water stretches six miles along the public road, which is called Loch Ailt; and the river flowing from it, after a course of six miles; is lost in Lochaingart, an arm of the sea. Then succeeds Lochnanua, a beautiful bay; and turning northward to the ferry of Arasaig on the sea-coast, the branch of salt water is called Lochnangeal.

This line of communication from Lochaber to Arasaig is all black with gloomy heath; except on the margin of the waters; until the road descend towards Arasaig, where the hills are generally green on the north, but studded with rock in such constant succession, from the bottom of the valley to their summit, that their aspect puts one in mind of the fine freckled sky which generally covers the aerial vault of heaven, in the evening of a serene day. The mountains of Moidart, on the south; are more heathy and barren, but less rocky. While travelling in this defile, the

* Lochiel seems to be so named, from its resemblance to a long crooked thong of leather.

rains were so excessive, and of such long continuance, that we were in one place inclosed betwixt two torrents, Ault-nan-U before us, and that of Loch Ailt behind, where we were in danger of perishing. No human being lived in that space, and there was no building where my servant and I could find shelter to pass the night; the stones at rest were so large, and others rolling down with the torrent; the rocky bottom so shelving, and the water so muddy, that we durst not attempt to ford where the road led. After some consultation, the friendly Malcolm Macfarlane, to whose sagacity, and acquaintance with these countries, I owe much, sought out a place where the stones were not so great, the water broader, and the stream less violent. Although the banks, even in this place, were high, and consisted of deep moss, there was no alternative but to make the attempt, or pass the night in the open air, under such a deluge of rain as I had never seen. We escaped without any accident. We forded many large rivers, but this was the most critical of them all. After travelling a few hours more, all our disasters were forgotten in the hospitable mansion of Mr. Cameron of Fasfern. Bad roads are nothing to the want of bridges; and when bridges are built over mountain-torrents, the span ought to be so large as to contain more water than ordinary, because no man can calculate beforehand what the quantity may be at some future period.

The next valley to Arasaig, northward, which penetrates into the rough bounds from the mountains bordering on the tract of the canal, commences at Achuacarry, and stretches westward by Locharkaig, a fresh water lake of sixteen miles in length, and in some places one in breadth. Between the mouth of
this

this lake and Loch Lochy, into which its contents are discharged, the distance is hardly two miles, where the castle of Colonel Cameron of Lochiel is situated on the bank of the river, protected under the shelter of aged trees, and surrounded with red deer, the indigenous breed of Scotland. From the west end of Lochark-aig there is a glen of six miles more, stretching forward to the highest summit of the rising ground, which is called Glenpean, a beautiful green grazing.

It is a singular feature in the complexion of this country, that the lower grounds are in many places covered with barren heath, growing on a poor soil, while the tops of the mountains, to their summit, are clad with a rich carpet of green grass, springing from a fertile mellow earth.

From this station, or from Maam Chlach Ard, in Glendessary, a most sublime object is presented to view, a wide expanse of sea, sprinkled with the Caledonian islands, at different distances and of different magnitude. Skye, the chief of these, appears on the right, with Rum, Egg, and Cauma; and in the distant horizon the long train of the Hebrides, like a dark cloud resting on the bosom of the ocean, glimmers in the eye, fatigued by tracing their length, which extends a whole degree on the equator. Turning to objects more at hand, Loch Morar, a fresh-water lake, whose length is fourteen miles, is beheld at the foot of this elevated ground, and the river issuing from it falls into that part of the sea called Linne Letach. On the north, Glendessary stretches in a direct line four miles. At the head of this glen is a pass, named Maam Chlach Ard*, which leads down to Loch Nivaish,
an

* *The pass of the high stones.* Maam is a frequent designation in the Highlands,
D 2

an arm of the sea twelve miles in length, having North Morar on the left and Knoidart on the right. Both sides of Loch Nivaish are very rocky; but the side next Knoidart has more green ground than the other. We often had to travel over mosses or rocky ground, where we could not ride.

The next valley of consequence, whose waters fall at right angles into the line of the great canal, is Glen-gary, which is distinguished by the rude magnificence of the old castle in ruins, situated on a rock on the west side of Loch Oich, and surrounded with venerable old trees. The present family mansion is a modern house, built at a small distance northward. Four miles up this glen you meet Lochgary, which is four miles long, closely wooded with natural firs on the south side, and birch and aller on the north; which is also the case on the sides of Locharkaig, the property of Lochiel. An opportunity will occur afterwards of mentioning the predilection which firs uniformly discover for the north exposure, or stormy side of a country. The river flowing into the head of Lochgary, reaches to the south end of Glenqueich*, which stretches northward, and Glenkingi southward. In the former is a fresh-water lake six miles long. The ascent from the head of these glens is three miles, immediately

Highlands, applied to the passage between the shoulders of two hills, which is supposed to resemble the opening betwixt the fore-finger and thumb extended. *Glas*, which is also frequent, is a narrower opening, analogous to the four fingers bent half way towards the wrist.

* The Glenqueichs, of which several are in the Highlands, are oblate ellipses, narrow at both ends, and comparatively broad in the middle; a name borrowed from the shape of the silver cup with which the Scotch used to drink their favourite liquor, before the introduction of glasses. But I go very sparingly into etymologies, because some readers dislike them.

above

above Lochurn, a deep gloomy branch of the sea, with high rocky banks. In all this stretch, from the house of Glengary on the east, to Lochurn on the west, the lower ground is generally clad with heath, but the higher mountains are green rich pasture, according to a remark formerly made.

Glenmoriston is the succeeding entrance into the rugged country, which leads from the great valley to the Atlantic. This glen may be entered by a Maam, in an oblique direction from Fort Augustus, which points north-west, and is seven miles long; or by another road, from Invermoriston, in the direct line of the river. The latter is the easiest ascent; but the former is the military road, and forms a much shorter communication between Fort Augustus and the military post at the barracks of Bernera, in Glenelg. These two roads meet a little below a place called Aonach, which seems to be a proper station for an inn, when this road is repaired. Glenmoriston abounds with natural firs, the same as Glengary and the side of Loch-arkaig. About eight miles from Aonach, a small lake, called Loch Cluany, three miles long, makes its appearance. To the east end of Glensheil are six miles more, where the waters separate, some running east into Loch Ness, and some into the Western Ocean. This point also forms the boundary betwixt the counties of Inverness and Ross, and is the northern extremity of that mountainous and elevated ridge of country which stretches from Morven to this place, as above-mentioned. From Glensheil, which is twelve miles long, the road returns to Inverness-shire, by a pass called Maam Raitachan, into Glenelg, which is eight miles long, and is the richest spot, both in grass and corn, hitherto mentioned in the Highlands of this county.

The road in this glen terminates at Caol-rea*, which is the ferry in this direction to Skye.

There are two Glenelgs. The smaller one lies on the south side of that where the road is, being separated by a ridge of green ground. The barracks at Glenelg, which are mouldering to decay, are not worthy of notice in a general description; but there are two towers, consisting of concentric circles, in this place, whose antiquity is beyond all record or tradition, which claim a place in the antiquities of the county.

All the cattle reared in the Isle of Skye, which are sent to the southern markets, pass from that island to the main land by the ferry of Caol-rea. Their numbers are very considerable; by some supposed to be 5000, but by others 8000, annually; and the method of ferrying them is not in boats, as is done from the Long Island, where the passage is broad; but they are forced to swim over Caol-rea. For this purpose the drovers purchase ropes, which are cut at the length of three feet, having a noose at one end. This noose is put round the under jaw of every cow, taking care to leave the tongue free. The reason given for leaving the tongue loose is, that the animal may be able to keep the salt water from going down its throat in such a quantity as to fill all the cavities in the body, which would prevent the action of the lungs; for every beast is found dead, and said to be drowned at the landing place, to which this mark of attention has not been paid.

* *Caol-rea* is a compound word, and signifies the *strait of the rapid current*. The flow sets in from the south, and in spring tides no vessel can run against it, let the wind be ever so favourable. The ordinary motion of the current is at the rate of nine knots in an hour.

Whenever

Whenever the noose is put upon the jaw, all the beasts destined to be ferried together, are led by the ferrymen into the water until they are afloat, which puts an end to their resistance. Then every cow is tied to the tail of the cow before, until a string of six or eight be formed; a man in the stern of the boat holds the rope of the foremost cow. The rowers then ply their oars immediately. During the time of high water, or soon before or after full tide, is the most favourable passage, because the current is then least violent. The ferrymen are so dexterous, that very few beasts are lost.

Having mentioned any geographical circumstances which appear most prominent in the western parts of the county, we must now turn our face towards Inverness.

Fort Augustus is ~~one~~ of the most pleasant spots in the Highlands, situated on a smooth green hill at the west end of Loch Ness, and having a river on each side, which washes the base of that hill, and flows gently into the lake. The pleasing sensations arising from the beauty of the place, are much enhanced by the urbanity and hospitality of Governor Brodie, to those who are so fortunate as I was, in being indebted to his good offices.

Travelling down the north side of Loch Ness, a person of any taste must be struck with the sublimity of the scene. A sheet of water before him at one view, twenty-two miles long, and apparently two miles broad, which is unquestionably the largest body of fresh water in Britain. The sides present a continued line of bold rocky ground, rising immediately from the lake to the height of mountains, without any opening on either hand, except at Invermoriston, at Urquhart, and hardly one at Foyers. These lofty sides, in

which the lake is embosomed, consist mostly of shelves of earth, incumbent upon rock, which afford nourishment for copse of various kinds. Where the rock is covered with soil, hazel, oak, alder, abound, and some ash; and the greatest number of aged weeping birches I ever beheld in one place, or probably in the kingdom. The thickness of their fretted indented bark, indicate their age; and the length of the pendulous ringlets of these venerable birches, frequently overhang the face of rocks, and reach down to the ground. Rocks, rivulets, trees, and mountains, are reflected in the smooth mirror below, with an effect which neither a description in words can accomplish, nor a delineation by the pencil produce. Young birches have neither the bark chopped, nor the branches hanging down; from which circumstance it is probable that all birches at an advanced age uniformly exhibit the same solemn and striking appearance. The loftiness of those ranges of mountains which stretch along the sides of Loch Ness, may be conceived from the altitude of Meal-suarvonie on the north, and Sui-Chuimanich on the south; the former 3060 feet above the sea, and the first land-mark to mariners upon entering the Murray Firth; the latter almost as high.

Nearly opposite to Foyers there is a fine fall of water, of unmeasurable length, descending from the mountain called *Meal-suarvonie*, but not of such a large body as that of Foyers on the south side, which is discovered at this distance by the cloud of spray ascending from it, that rises into the air until the watery particles are rarified into the appearance of a white column of fog. Of the fall of Foyers, in visiting which I was honoured with the company of my friend Mr. Fraser of Farraline, I find it impossible to convey in words
any

any adequate idea to the reader. No description can come near the truth. Conceive a whole river precipitated down the side of a rocky wooded mountain; at the foot of every projecting rock forming a turbid basin, to prepare for the next fall of the same altitude, until by a succession of the most tremendous cascades, the most incessant roaring, and the most sublime scenery of nature, the waters at length find repose in the smooth bosom of Loch Ness. From these two tremendous cataracts, the lake has in all probability derived its name. *Cass* signifies a gloomy fall of water, where the darkness of the overhanging trees, and the deepness of the sides, exhibit the features of an abyss that appals the beholder. Loch-nan-cass (contracted Loch-Ness) is evidently the lake of cataracts.

Passing over a ridge of high bleak moor, and descending by a northerly direction into Urquhart*, the scene is reversed. In place of the lofty barriers of Loch Ness, which present nothing but barrenness and the rude grandeur of Nature, which mocks at cultivation; in Urquhart, a bottom of about two miles in diameter, as flat as a bowling-green, is beautifully diversified with wood and water and enclosed fields, under various crops, both white and green. The uncultivated moor in the centre of this delightful spot, puts one in mind of a mole upon a fine face. The village

* *Urquhart*, or, as it is pronounced in Gállic, *Urchatin*, is supposed to signify a *washing-tub*, which is very descriptive of the place. Mr. Grant of Corrimony favoured me with this derivation; and I saw *Clach-na-hur-chatin* at Inverness, the stone upon which the washerwomen rested themselves, by laying down their tubs, when carrying them to and from the river. Some persons ridicule derivations, because they do not understand them, imagining that the language of the Highlands is not as descriptive and as capable of derivation as any other tongue.

which

which Sir James Grant is erecting near his villa in this place, and the convenient inn he has built at Drumna-drochat, are a proof of his taste in improving his property, and in providing for the accommodation of the public. The Castle of Urquhart, which stands on the west side of Loch Ness, has a claim to such remote antiquity, by having withstood the ravages of time above nine centuries, that it merits a place among the antiquities of this county.

Urquhart narrows into a glen, in a westerly direction, going up to Corrimony, which is more or less confined in different places; but very much beautified by neat houses and well dressed fields, Loch Meikley, a small sheet of water, and plenty of wood, chiefly birch. Although Corrimony* be situated at the extremity of this glen, nevertheless the richness of the soil, the luxuriance of the crops, both white and green, shew that Mr. Grant, the proprietor, understands how to bring good land to the best account.

Crossing over a small barren moor into Strathglas, which is the most northerly valley of the county of Inverness, in these regions, the face of the country presents a very singular appearance. In the bottom of this strath the land is almost a dead flat, very narrow, and nearly all green; in which meadow and some arable land, and several small lagoons and marshes, are interspersed. The sides of the strath are uncommonly precipitous, and in most places are strewn with fragments of broken rock, which having been loosened by the rains, are falling down occasionally

* I am indebted to Mr. Grant of Corrimony, also, for this derivation. This word is derived from Moni, the King of Denmark's son, who was buried here. The grave is still shown; and some other places in this country are named after Moni.

and

and gathering additions for ages. The river Glas has in many places the appearance of a narrow lake, by reason of the slowness of its motion, which in most places is scarcely perceptible, occasioned by the difficulty it meets with in discharging its waters at its confluence with the Farrar.

In the head of Strathglas there is much green pasture, and an extensive fir-wood; and the lower parts of the valley, in the approach to the castle of Mr. Chisholm of Chisholm, abound with aller, on both banks of the river.

The scenery is uncommonly engaging, from the castle of Erchless to the Aird. A majestic river winding its course through a bottom of considerable breadth abounding with wood, and the mountains retiring on either side as you advance, which indicates the approach to the low country; a circumstance peculiarly grateful to a person who had been pent up for several weeks in narrow defiles, resembling long galleries between mountains or rocks, which rise like mighty walls frequently to the clouds.

In this tract the river is divided, forming a small island called Agish, the scene of some romantic transactions in the days of chivalry. Below this island, which is always depastured, because of its being often flooded, the river descends with great rapidity down the celebrated falls of Kilmorac. A saw-mill is erected at this place, which consists of seven parallel saws driven by four wheels, where the logs of fir floated down the Glas are cut up for various purposes. Horses are employed to carry the boards past the falls; from the foot of which they are again floated in rafts down the Beauly (the name which the river assumes below the falls)

falls) to a place at Kirkhill, called Lovat, where they are shipped to any market that occurs.

The falls of Kilmorac, as they are called, are not so remarkable for any particular cascade as for the narrowness of the chasm in which this great river is confined between rocks, the quantity of water gushing and foaming down, the wooded banks which conceal the river, and the depth of the channel in which the cataract forces its way with incredible power and velocity. Although the greatest fall be only about twenty feet high, yet the roaring of the waters and the ebullition of the eddies create considerable emotion in strangers. The whole scenery is very interesting, and is frequently visited by persons of taste when passing through this country. The pool where the cataract terminates, is called the *red linn*, in which the salmon are so numerous, that they are frequently taken by three large hooks facing different ways, and fixed to the point of a pole, which a person standing on the rock puts down into the pool for half a minute, and when pulled up with a jirk, generally fixes into some part of a salmon.

At a little distance from the public road into the Aird, Beaufort, the family seat of Lovat, appears on the north, which is a commanding situation, and capable of being highly embellished. The modern house is built on part of the site of the old castle of the same name, which, it would seem, was considered as a place of strength before the use of artillery. The river Beaully flows on the north of this castle, and the ascent from the river to the bottom of the wall is about 100 feet of green ground, exceedingly difficult to surmount. The place had been defended by two ditches on the other sides, the outer one at a considerable distance from the other;

other; and large masses of the old wall, which was followed by the course of these ditches, still remain and point out the consequence formerly attached to the castle of Beaufort; but at what time, or by whom this castle was built, is not known. It must have been in the generations posterior to those who were in use to erect vitrified fortifications in that country for their defence, because the walls were cemented, not by the force of fire, but by lime, the same cement used in our own times. The vitrified fortresses, on the other hand, of which I shall have occasion to take notice in the sequel, were no doubt posterior to another species of strong holds to be met with in some parts of this and other counties, which are composed of large flags laid together, and built with considerable art to an uncommon height, without any cement whatever, which it seems was not known at the very early period when these were built.

Among the birds that were peculiar to this country, notice is taken of the caperkailly, a large kind of wild turkey, which was wont to breed in the fir woods of Inverness-shire. It is more than half a century since any of these birds have been seen. The species is extinct in Scotland; but they still exist in the extensive forests beyond the Baltic.

The druidical circles of stones in every district are many and singular. In some cases they consist of two concentric circles; in others the circle is single and smaller. The larger circles are always found where they are most numerous, and in some instances are upwards of seventy yards in circumference. Although their form is always similar, yet the number of stones, and the size of the temples, were arbitrary. The cardinal points were marked with precision, where the
magnia

magnitude of the plan gave an opportunity of doing so, by the selection of the largest stones. Their figure, and this attention to the points which mark the apparent motion of the sun, lead us to suppose that, like all other savage nations, the first inhabitants of this country borrowed the rudiments of their religion from the observation of the heavenly bodies. It is not frequent that any thing like houses appear in the vicinity of these circles; nevertheless I saw at Corrimony the vestiges of the druids' house, and some large flags, which seem to have covered graves.

If we were to indulge conjectures, or travel into the regions of fancy, we might suppose that the larger circles were the cathedrals of these times; and that the temples being in all cases too small to hold any considerable number of people, the ordinary worshippers remained without, while the druids alone were admitted within. These stones were not in a single instance quarried from rocks, which would have given them angles, and sharp sides and ends: they are all smooth round blocks of the larger kind of field stones, and generally of an oblong figure, selected with great care, and carried for the most part from such a distance, as must baffle every conjecture as to the mode of their conveyance prior to the knowledge of mechanical powers.

A singular building stands on the summit of a hill, about two miles east from the church of Kiltarlity, whose circumference is 54 yards, and the thickness of whose walls is nine or ten feet, built of large stones, without mortar of any kind. There are some other fortresses of the same kind, in various parts of this and other counties, which seem to be the first essays of the original inhabitants of the country to secure themselves
from

from the ravages of wild beasts, or from the sudden attacks of one another. They seem to be coeval with the dawn of society in this country, as mentioned above, since the persons who constructed them were ignorant of every kind of cement, either by lime or vitrification. If any thing has a claim to be classed in the antiquities of the county, these certainly have.

Between the Aird and Urquhart, in the mountains towards the east end of Loch Ness, whose summit is tolerably level, and not infested with large stones or rocks, the vestiges of ridges are very distinctly seen in the heath, that in the furrow being uniformly shortest, for want of soil. The same appearance is met with in other counties, as I have elsewhere taken notice of; which may afford a subject for exercising the ingenuity of the curious.

In the Aird there is a vitrified fort, similar in its figure and materials, and no doubt in the manner of its construction and usefulness, to many others of the same kind in the north of Scotland. The wall is a complete circle, whose circumference measures about sixty yards.

The elegant mansion of Belladrum, the seat of Colonel Fraser, appears on the south, looking down upon this part of the Aird. The extent of the plantations around this place, and the taste displayed in dressing the ground, no less than the magnificence of the house, are very attracting. The apartments are large, and finished in the highest style. The front of the body of the house measures 52 feet: the wings extend 60 feet back, by 30 in front; which makes the front of the whole building 112 feet. The whole walls are cased with the beautiful stone of the quarry of Craig-Leith,

Leith, which is so ornamental to the principal houses in the New Town of Edinburgh.

The offices of Belladrum were not built when I was in that county; but what they were to be, may be inferred from a neighbouring court of offices nearly square, which the Colonel had built upon one of his farms. The front and back were 105 feet long, having 100 feet in the sides, with a balcony, and other embellishments, all of hewn stone.

In the Introduction it was remarked, that the Aird and the vicinity of Inverness were the most improved districts of this county, in the elegance of the buildings, the warmth afforded by the plantations, the taste displayed in dressing the fields, the judgment discovered in the direction and construction of fences, and the unwearied industry in reclaiming waste land.

Culloden, which has not been taken notice of, stands conspicuous a few miles east from the county town. The house is large, and the front is elegant; the pleasure-ground well dressed, and the trees stately; but the land under tillage comes too close to the back of the house on the east, which seems to be in the possession of common farmers.

A few miles above this house, and in the parish of Croy, is the moor, so fatal to the rebels in 1746; which, it is hoped, has given a lesson to Britons to rebel no more. These infatuated men met here with the fate which any person of common understanding might have foreseen. The Royal Army could not have chosen a more proper field to meet an enemy such as they had to engage, nor the rebels a worse, in their circumstances. A moor extending many miles in length, from near Nairn to the foot of Stratherrick, and
of

of several miles in breadth, from the river of Strath-nairn to the Murray Firth, without a hillock or glen; or thicket or rock, for a cover, was a most extraordinary situation to receive the shock of the Royal Army. To draw up an irregular multitude of starving, shivering, sleepless, and fatigued men, in such a place, to contend with disciplined, veteran troops, with cannon and cavalry, was a fatality which might have prognosticated the fate of the day. Less than two hours march from the field of battle, might have brought them into such strong ground, on the south of the river Nairn, as would have been utterly impracticable for an attack by horses or ordnance. Even the stone wall on their right, which the rebels expected to have been some protection from Stapleton's dragoons, proved only a forlorn hope. It is a dry stone wall, without cement of any kind, and easily thrown down; inso-much, that six men in as many minutes could have opened an entrance for a file of troopers.

The best informed gentlemen of that country are of opinion, that the Prince's counsellors were tired of the business, and wished to have it brought to an end, no matter how; which, from the circumstances mentioned, and others, seems to be the truth.

The green hillocks interspersed on the heath, with a few field stones thrown upon them, mark the graves of those deluded men, whose valour deserved a better fate. They ought to have been cherished and caressed, not insulted and injured; that, being friendly to a government which conferred upon them marks of regard, they might safely have been called forth in defence of their country, not for its destruction. At such a sight, the sigh of sympathy rises involuntarily in the breast. The disasters of civil war dwell on the imagination;

but the unjustness of the cause is overlooked. The effect remains, and clouds the soul with melancholy; while the folly of the principle of action is forgotten.

In the ride to Fort George, the venerable Castle Stuart appears on the left hand, and exhibits striking features of a very remote antiquity. This is a magnificent pile of building, situated on a rising ground on the margin of the sea; and, before the use of guns, must have been a place of great strength. The extensive orchard, the aged trees overgrown with ivy, and the moss-clad walls, would lead one to suppose that it is coeval, at least, with the warlike æra of Randolph, the bosom-friend of Bruce, and his companion in all his toils, who, it is certain, built a castle at Tarnaway, and one at Dunbristle. These two are much embellished by the present Earl of Moray; but Castle Stuart had gone so far into decay, that all repairs were fruitless, although the British title of the family was derived from it, when a few years ago the Sovereign thought proper, as a mark of personal respect, to confer an additional title on the present Earl, who is no less distinguished by the qualities of his mind, than by the splendour of his coronet.

Fort George is a beautiful place, situated on the extremity of a low promontory or tongue of land, which penetrates far into the Murray Firth, opposite to a similar head-land in the county of Ross; which form a strait, the passage of which is completely commanded by the garrison.

In place of re-building the Castle of Inverness, which had been reduced and destroyed by the rebels in 1746, Government purchased, from the family of Calder, some hundred acres of ground, for building thereon this fortification, and the remainder to be allotted

allotted as a farm to the Governor. The building was begun in 1748, in the form of a pentagon, covering fifteen acres of ground, not, however, perfectly of the same dimensions in all the sides, but strongly fortified, according to the most approved rules and models of that art in modern times. On the landward side, the ground is a dead flat to the distance of more than a mile; at the extremity of which there is a rising ground, called *Ardersier*, upon the top of which Oliver Cromwell erected a small fort, defended by a mud-wall and ditch. The lowness of the situation of **Fort George** prevents mines, or even lines of approach, which would be filled with water every tide, oozing through the water-washed gravel on the neck of land, on the point of which the fortress stands. The apartments contain accommodation for at least 5000 men, besides elegant lodgings for the Governor and Officers, a large armoury, a bomb-proof magazine, and chapel. Three sides of the pentagon face the land; two are washed by the sea; and the walls mount 80 guns of a large caliber: every angle towards the land side is covered by outter works, which defend the flanks and are situated so low, as not to obstruct the fire from the the citadel.

The pleasure of viewing this fortress is much enhanced by the polite attentions of the Governor, the Honourable James Stuart, who did me the honour not only to walk round the works, but to show his farm, where I saw the only drilled *pease and beans* in the whole county. The turnips and other crops were in excellent order, as will be observed under the proper divisions of this Report.

The village of Campbeltown is in the vicinity of the

garrison, and probably got its name in compliment to the family of whom it holds.

In the parish of Petty are two round artificial hills or mounts, about 150 feet in circumference at the base, 42 feet high, and the top quite level, which also is a circle of 120 feet in circumference. They are called *Tom'-voit* (the court-hill), where the baron who inhabited Castle Stuart probably administered justice, in those times when the parties at variance were attended by such a retinue of partizans, that the courts of justice always sat in the open air.

In this parish the streams of fresh water are so scanty, that in one place a corn-mill is driven by the reflux of the tide.

Ascending southward from the shore of the firth, the ancient castle of Dacus, which is the property of Mackintosh, chief of that name, makes a conspicuous figure. It is a huge mass, standing on the high ridge of a bleak moor, not far from the site of the battle of Culloden, exposed to every blast, and without the shelter of a single tree.

Towards Nairn, the castle of Lord Cawdor rears its head on the left, well covered with plantations of tall trees; but being beyond the boundary of Inverness-shire, a regard to my duty directed me by the road which leads to Cantray, a property situated on the river Nairn. Comparing the accounts given of the former condition with the present state of this place, I had seen very few spots in all my travels, where so much industry had been employed, or judgment discovered, in reclaiming waste land, besides enclosing, dressing, planting, and in all respects embellishing and enriching the country. Every thing was of a piece—
houses,

houses, gardens, and fields, do honour to the memory of the late Mr. Davidson, and show an example to his son and neighbours, what can be done by perseverance and a good understanding, even in a northern climate.

In this division of the county of Inverness which lies east from the Great Canal, there are six vallies, of various degrees of sinuosity, which send all their waters to the German Ocean. Strathglas has been already taken notice of. The tract of Loch Ness has been also mentioned. Stratheric is situated on the south side of Loch Ness, and is supposed to be 400 feet above the surface of the lake. The two most remarkable places in this strath, are Gortlec and Farruline, belonging to gentlemen of the name of Fraser. At Gortlec, drilled turnips, fields of sown grass, enclosures, and plantations, appear pre-eminent in a district of country which is naturally bleak, and unfriendly to the operations of the plough. The house of Farraline stands on the border of the lake of that name. The land is substantially enclosed; but few modern improvements have been hitherto introduced, because the proprietor finds it necessary to reside near the capital of the county, for the discharge of the arduous duties of Head Sheriff and Vice-Lieutenant of Inverness-shire.

The river Erick, which flows through this strath, and gives its name to the country, is singularly romantic, both in its origin and termination. The small lake, which is its source, is surrounded with a circle of rocks, through which there is hardly a possibility of descending into a plat of land, called Killin, the most beautiful, rich, and verdant, that can be conceived. This fairy-ground is a mile long, and half as broad, and lies in the centre of mountains, the wildest perhaps in the kingdom. The termination of the river

Erick is at the fall of Foyers, which defies description, where its waters are surrendered to Loch Ness.

Leaving Strathnairn and the view of the Murray Firth, on coming southward, we emerge into the heart of the Grampians, bleak, bare, black, and barren. At length the valley of Moy* makes its appearance, where the eye is refreshed by the view of a rich extensive plain of arable and meadow land. The house of Macintosh, the Chief of that Clan, stands at the head of a small lake, well sheltered from the north by a grove of large trees. That gentleman was building a new house in autumn 1804. The lake is distinguished for its char, a species of trout, which is found both in this place, in some lakes of Lochaber, in Loch-an-righ, parish of Laggan, and in Loch Bruaich, in the Aird; yet not so frequent in the county of Inverness as in Perthshire. Near the middle of the lake is a beautiful islet, comprehending about two acres of ground, in which are the remains of a house, occupied by that Chieftain before the country was civilized. The date on this ruin is 1665, at which time, we are told, it was built by Lachlan, the twentieth laird of Macintosh. The vestiges of a street and of a small town, may be traced in the island. A smaller island is shown, which was the chieftain's prison; but its being occasionally overflowed, proves that transgressors are now more humanely treated in the King's hands, while comfortably lodged in the jail of Inverness, than standing to the waist in water, as must frequently have been the case in the prison of Loch Moy.

* All the Moy's in the Highlands are extensive plains, of which circumstance the name is significant, places of that description being so rare. The dells and blairs are less extensive plains.

At a little distance southward, the weary traveller arrives at Freeburn-inn; from which place all the waters of this mountainous region are seen flowing from the north, the west, and south, in their several glens, to meet below in a point, like the radii in the centre of a circle, from which the united stream of Strathdearn holds its course through a narrow chasim eastward to Findorn, where it is lost in the German Ocean.

The next place worthy of notice is Slacked-muir (the boar's den), which forms the entrance, in this direction, from the north into Strathspey. The road over this defile was undergoing great repairs. Rocks of immense size, on both sides of it, were blown. The fragments were piled up like great walls, to form buttresses for the road on the declivities; by which means the highway is rendered tolerably level and easy, where formerly the ascent and descent on shelving rock was abruptly steep, fatiguing, and dangerous.

There is little variety all the way to Grantown. The extensive fields of dark-brown heath, studded by stocks of fir-trees, with some spots of corn and green ground, on the sides of rivulets, form the near prospect for several miles. On the opposite side of Strathspey, the dark-blue mountain of Tullochgorm, and his associates, in the distant horizon beyond the Spey, rear their heads to the clouds, studded with perennial patches of snow.

From the church of Duthil, the country lays aside much of its gloomy appearance. The Dulnean, a branch of the Spey, has some good land on its banks, which increases in fertility and extent as it approaches the bottom of the strath. By and bye the Spey, the

monarch of this vale, comes in full view, winding his majestic course within green banks, to which the heath dares not approach. The farms are more frequent; patches of turnips and fields of potatoes are on either hand; and lime-works are wrought for sale.

Grantown is a neat clean village. The street is spacious and regular; and the houses are all substantially built, and covered with blue slate. At the eastern extremity of the village, begins the approach to the chieftain's castle, which is obscurely seen, being enveloped under the cover of aged trees of great stature and variety. The alternate obscurities occasioned by the solemn gloom of luxuriant foliage, and the openings presented on either hand, by well-dressed fields, must attract the attention and soothe the feelings of a sentimental traveller, where the sublime and beautiful are so happily blended together in the same scene. The contrast they form, heightens the pleasure of both. The loftiness of Castle Grant is much concealed by the altitude and nearness of the trees, till you are close upon it; and the propriety of the trees being so numerous and so near, is occasioned by the stormy nature of the climate.

Every thing without and within denotes the habitation of a Chieftain, and brings to remembrance those days, in which the head of every tribe was surrounded by his own Clan. His castle was their fortress; his approbation was their pride; his protection was both their duty and their interest. In his safety their own fate was involved; in his hall stood the board, to which they were always welcome; there he sat with all the sentiments of a father in the midst of his children; he acted as their general in the day of battle, their

their judge in the time of peace, and was at all times their friend.

Sir James Grant holds the supreme military command of the county, under his Sovereign. He is beloved to adoration by his people; and not only commands the obedience of their personal services, as Lord-Lieutenant of Inverness-shire, but the grateful affection of their hearts, as the benefactor of this county, and the father of his tenants.

From Castle Grant to Avemore, along the side of the Spey, the face of the country is very much diversified. In some places, the ancient mode of occupying the ground remains in full force: cottages crowded into hamlets; the farmers living in clusters, all in one place; their land open, and in alternate ridges. But in other places the land is enclosed, and a neat steadying set down for a substantial tenant; and where the people are less affluent, the ground is divided into separate lots of fewer or more acres, according to the ability of the occupants, where every tenant is set down upon his own lot; which mode of settling the country, with the addition of villages in proper situations, I hope to demonstrate, is the most effectual plan of preserving the population, of accommodating the people, and of preventing the baneful effects of emigration; while at the same time the country is improved, and rendered capable of producing more rent to the proprietors. What an extensive field does Strathspey, and indeed every province of the county, open to the landlords, of providing for double the number of people (were it necessary) that are at present in the county, by encouraging and directing the inhabitants to the means of cultivating the immense

mense tracts of waste land in every district of the county !

It would be unpardonable to pass *Craig-ellachy* (the rock of alarm), without acquainting the reader, that from this rock, which is above Avemore, and from another of the same name and use, at the distance of 30 miles, fires were lighted, to alarm the inhabitants of Strathspey, when any sudden emergency required their prompt attendance to resist an attack. These stations were admirably fitted for giving signals, and for being places of general rendezvous to all the country on both sides of the Spey, for many miles both east and west.

Every Clan had, in ancient times, their peculiar and known posts of alarm, and their central places for assembling in complete armour, in circumstances of danger, during the prevalence of predatory war : and when burning was dreaded from a desolating foe, a portable stick, of the size of a man's arm, and double that length, with a burnt end, and a cross upon it, was dispatched from farm to farm with amazing speed ; every man being obliged to run as fast as he was able with it to his next neighbour. The *crois-tarich* was thus conveyed with more velocity through a whole country, than was practicable by any single messenger, and gave warning to the inhabitants to secrete their most valuable effects.

How happy are the days in which we live ! how highly ought we to value our privileges ! Every man sits secure, protected by the shield of Britannia, under his own vine and his own fig-tree, none daring to make him afraid ! No voice, no fire from a *Craig-ellachy*, nor a *crois-tarich*, give us the signal of distress, to in-
form

form that our houses and effects are about to be laid in ashes. Let us value our protection as we ought. Let us cheerfully pay for it; and let us defend our country while our blood is warm.

Rothiemurchus (a compound word, signifying *the great plain of firs*) is snugly situated on the south bank of the Spey. The large steading of handsome offices, the regularity and number of the enclosures, the luxuriance of the crops in all the variety which that climate can admit, and the complete assortment of every utensil that can facilitate agricultural labour, bespeak the judgment and public spirit of the proprietor. It must prove a loss to this Report, that Mr. Grant was not at home, and that my notes were not enriched by his remarks. The natural fir-woods of Rothiemurchus are the most extensive in the county under review, or probably in the island.

At a short distance above this place, and on the opposite side of the Spey, Kinrara, the cottage of the Duchess of Gordon, is happily set down. The vale, in which the river flows, is narrowed considerably at Kinrara. The banks on both sides are richly wooded by a variety of trees, whose green foliage far up the acclivity of the hills, gratifies the eye, and the sweet fragrance of the birch embalms the air. Some beautiful fields are formed by the serpentine course of the river, which glides by with an equal, but not rapid motion, on its pebbled bed. This mansion stands on the brow of a small wooded hill, in a commanding situation, with dropping trees on the fore-ground, fronting the south, and in full view of the river and all the surrounding scenery. The piazzas along the front, the Venetian windows, the elegance of the apartments, the furniture, the library, and the style of the whole,

whole; display the most exquisite taste, and show that Kinrara is no ordinary cottage. If the Graces had superintended the building of a lodge for their Queen, it might have been constructed after this model. But the captivating appearance of the cottage is only the shadow of the hospitality that reigns within.

The garden is closely embosomed in wood, sheltered from every blast, and under the direct rays of the meridian sun, with a gentle declination. The drilled turnips, and the other crops, demonstrate the variety of talent and strength of mind, which are the springs that move all the operations about this singular place.

Between Kinrara and Kingussie the aspect of the country is considerably changed from what it had been below the former place. There are fewer black moors of low ground (in England called heaths) contiguous to the river, where the plains are all green and of considerable extent, elevated but a few feet above the tract of the Spey. Wherever there are hollow basons in this flat land, water stagnates, when the river has subsided, after every inundation; which occasions marshes and lagoons of greater or less extent, in proportion to these inequalities of the surface. The alders and willows, and other useless shrubs, which grow upon this swampy ground, disfigure the country of Badenoch, and occupy a soil, which, if drained, would be the most productive in the whole district.

Several gentlemen's houses are situated in chosen spots, on both sides of the Spey, in the lordship of Badenoch. The monument erected to the memory of Macpherson, the translator of Ossian's Poems, makes a distinguished figure in a conspicuous situation below the house of Belville, where he resided. He had the industry to collect these poems (as the *Iliad* and *Odyssey*

Odyssey must have been formerly collected, because no memory could retain them in a connected series before the use of letters). He had the discernment to arrange and adjust the different pieces of the longer poems together in the form of a connected plan, and, with the assistance of another gentleman, who understood the originals perfectly, to publish a translation. This is all his merit. But no person who knew his abilities, either as an author or a translator, or is acquainted with the state of the Highlands, or heard these poems repeated before Mr. Macpherson came on the stage, will for a moment seriously believe that he was the author. Some men are fond of maintaining paradoxes; and by reason of the mysterious silence of the translator, which was occasioned by his pride, the authenticity of the poems has become a fit subject for exercising the ingenuity of these men, in mustering up objections to their antiquity, by denying that Fingal fought, or Ossian sung.

Opposite to the village of Kingussie*, on the south side of the Spey, stand the ruins of the barracks of Ruthven, which consisted of two parallel houses, capable of lodging two companies of men, connected by ramparts at the ends, and the angles were defended by bastions.

The mount upon which the building was constructed is a beautiful green insulated hill, which, by reason of its singular appearance, is supposed to have been artificial. There is no doubt that it had been the site of a strong-hold of the Cummins, Earls of Badenoch. After the insurrection in the year 1715, it was purchased by

* This name signifies *the end of the forest of fir*, which, it seems, at one time covered not only much surface in Strathspey, but reached westward for many miles in Badenoch to this village and parish.

Government, and in 1718 the barracks now mentioned were built, which, after an obstinate resistance from the besieged, who amounted only to a serjeant's command, was burnt in 1746 by the rebels.

Contiguous to Ruthven, is the extensive farm and snug mansion of Gordon-hall, where it is difficult to say whether the industry discovered by Mr. Mitchell, in the cultivation of his land, or the attentions shown in the house, be most conspicuous. Both at Gordon-hall and at Dell, which is the farm of the Rev. Mr. Anderson, every species of crop congenial to that climate are cultivated in a superior style.

The extensive meadows in the mains of Cluny, and the mode of cultivation adopted by Colonel Macpherson in dressing his arable ground, must strike every man who understands any thing of farming. His relation, John Macpherson, Esq. at Dalchullie, keeps pace with his chief in every species of improvement.

The ravages of the Spey in the whole of Badenoch, especially in this upper part of the district, are a great hindrance, or rather an entire obstruction, to the success of agriculture within the reach of its inundations; and these are frequent, violent, and large. Where the mountains on both sides of the country are so high, and reach so far back, every brook occasionally becomes a torrent: where there is no reservoir in any part of this long strath, to receive the water from these numerous torrents, the river must swell suddenly, become furious, and in a mighty stream, both broad and deep, sweep all before it that comes within its reach; and where the land is almost a dead flat for a mile over, from one side of the country to the other, these inundations must be very destructive.

Near

Near Dalchullic, on the west, there is a rock upwards of 100 feet of perpendicular height, and very inaccessible, on the summit of which are to be seen the remains of a fortress, built with large rude flags without cement, similar to those in other places, formerly taken notice of.

Loch Laggan, in this neighbourhood, claims the attention of the curious in various respects. It abounds with char, besides varieties of other fishes, peculiar to fresh water. At the east end of this lake stand the remains of a chapel, dedicated to St. Kenneth; and near this religious house some of the Caledonian Kings are said to be interred. If the Castle of Inverlochy was the palace of these Kings, and that in the Isle of Loch Laggan their hunting-seat, during the encroachments of the Romans, or at a later period; when the Picts compelled them to abandon the country south of the Tay, and to establish their capital at Dunkeld, there is a considerable degree of verisimilitude in that tradition; especially when we consider, that, in the larger island of Loch Laggan, the ruins of the king's house are tolerably entire, and the ruins of his dog-house in a smaller island. In other lakes of Scotland that might be mentioned, where two islands are found, such was the predilection of the natives then for the chase, that while a great man had his residence in the principal island, he kept his hounds in the other. For the same reason, it is not improbable that a certain spot in the Thames, below London, is called the Isle of Dogs. In all events, no other place in the Caledonian dominions, in these days, could be more favourable for the diversion of hunting than the neighbourhood of Loch Laggan. The country is very inaccessible; pasture is plentiful; five miles remain
entire

entire of a forest, which formerly must have been much larger; the famous parallel roads of Glenroy are near at hand, which I shall endeavour to show were executed solely for the purpose of hunting, and made too by some powerful personage, who could command the labour of a vast number of people; and the red deer and roe abounded in these haunts, until they were lately banished by a sheep stock, with which they never associate.

Here we are arrived at high ground, where the waters separate in the same manner as at *Laggan-achdrom*, on the side of the Caledonian Canal, partly holding their course to the Atlantic, and partly to the German Ocean. The rivers Pattack and Massie run almost parallel to each other for the space of two miles; and yet the former, after joining the Spian, is discharged into the West Sea; but the latter, uniting its waters with the Spey, falls eastward into the German Ocean.

The inn of *Garva-more** in this neighbourhood, announces the extremity of the long vale of Strathspey and Badenoch, and the head of the Spey, which derives its source from a small lake of the same name in the northern mountains.

Seven miles beyond Garvamore, the military road which leads from Perth to Fort Augustus, by Corrighearach, being confined between a deep ravine on the one hand, and a chain of rock on the other, ascends by no fewer than seventeen traverses, mounting zig-zag, to the summit of *Mona-lia* (the gray mountain),

* *The large or extensive cliffs*, which is the most wild and most arduous ascent in all the Highlands, and perhaps in Britain, where any public road has been attempted to be made, and therefore fatal often to travellers.

so called, because the surface is mostly grey rock and moss, the soil having been worn off by the storms.

From this station the prospect is most extensive and awfully sublime; mountains piled upon mountains, pertaining to eight or nine counties which surround that of Inverness; lakes, of various sizes and shapes, scattered on every hand; and the whole face of the country deeply indented with straths and glens, far and near, in different directions: the cottages, like mole-hills, scarcely known by their smoke; the men dwindled down to the size of grasshoppers; and every adjacent vale taking its rise from that frowning cluster of mountains under your feet, of which *Mona-lia*, like a bald and bare head, rises above the rest. But the eye turns away with disgust from such immense tracts of gloomy heath, which now, for the third time, I have approached in the centre of the Highlands: first, in passing along the direction of the Great Canal, on my way to the confines of Ross-shire; then in ascending Stratherrick, at the western extremity of which Corrigearac* is situated; and now, in exploring the course of the Spey, from Castle Grant to the source of that river.

The descent on the north of this bold and tremendous pass, is by the western bank of the river Tarf, which holds a winding course, through thick groves of large trees, by Cuilechie, to the head of Loch Ness. Nothing but the desire of facilitating the intercourse of the military post at Fort Augustus with the South,

* Corrigearac signifies the embosomed valley of affright or dismay, which name is very descriptive of the feelings frequently experienced in this dangerous and long pass.

could have induced Government to have made a road over Corighearac, which cannot fail to put the classical traveller in mind of Hannibal's passage over the Alps, as described in the immortal page of Livy.



AGRICULTURAL SURVEY
OF
INVERNESS-SHIRE.

CHAP. I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. I.—SITUATION AND EXTENT.

THE County of Inverness, to which this Survey refers, is by far the most mountainous region in Scotland. It reaches from sea to sea on the main-land, and comprehends many islands, which are scattered far and wide, in the Atlantic Ocean. These, and the other islands in the counties of Ross and Argyle, are of such importance, and so similar in their circumstances, that the Board of Agriculture, by the tenor of their commission to me, have with much propriety, deemed them sufficient for the subject of a separate Survey. In that case, the following observations are chiefly confined to the continental parts of this county. Whatever may, therefore, occur relative to the islands, is only taken notice of occasionally, for the purpose of illustration, and ought to be considered as matters of

opinion or hearsay, but not as facts collected on the spot, and chastened by ocular inspection.

From the point of Arasaig on the west, to Fort George on the east, the length is at least 90 miles in a straight line; and from the ferry of Ballahulish to the boundary of Strathglas, the breadth from south to north is 80 miles. The square miles are 7200; the square acres are 4,608,000. The islands are supposed to contain one half more; which makes the whole land-surface of the county 6,912,000 acres of Scottish measure.

The latitude, comprehending the islands, is from 56 deg. 54 min. to 57 deg. 50 min. north: the mainland is about 15 min. less. The longitude west of the meridian of Edinburgh, is between 25 min. and 2 deg. 50 min. including the islands. On the south, it is bounded by the counties of Perth and Argyle; on the west, by the Atlantic Ocean; on the north, by Ross-shire and the Murray Firth; and on the east, by the counties of Nairn, of Elgin, and part of Banff.

SECT. II.—DIVISIONS.

THE divisions of this county are chiefly determined by natural boundaries. Lochaber* comprehends that

* This extensive district is supposed to have derived its name from a small lagoon near Corpach; but it is more likely to be denominated from the *confluence of lochs*, viz. Linne Loch, Loch Leven, and Lochiel, which are arms of the sea, that meet here, and communicate with the Sound of Mull, being the only arms of the sea known to me in Britain, which run together before they fall into the ocean. Four large lochs of fresh water send their united waters by the river Lochy into the sea at Fort William. The *abers*, in Scotland, are uniformly applied to the confluence of waters. Here it is applied to the confluence of lochs.

tract of country, whose waters are discharged into the Western Ocean at Fort William. Moidart, Arasaig, South and North Morar, and Knoidart, seem to belong in an extensive acceptation to Lochaber, because these districts are amenable to the Sheriff-court established in that country. Glengary is accounted a division; as also Glenelg, Glenmoriston, Urquhart, Strathglas, the Aird, the vicinity of Inverness, the lordship of Petty, Ardersier, Stratherie, the brues of Strathnairn and of Strathdearn, and the lordship of Badenoeh, are all accounted separate divisions of the county of Inverness. In the lower parts of Strathnairn, Strathdearn, and Strathspey, the counties of Nairn, and Murray, and Banff, are much intermingled with that of Inverness. But although these intermixtures were taken down in my notes, extreme minuteness, in that respect, would not only be tedious, but does not in the least appear to be requisite, in a statistical survey, wherein the agriculture of the country is the principal object of attention.

These divisions are generally marked by the different vallies, watered by a river peculiar to each, and comprehended within parallel ranges of opposite hills. The divisions of high land and low land, can scarcely be applied in this county; unless the Aird, the vicinity of Inverness, Ardersier, and the lordship of Petty, be accounted the low-land division, which, no doubt, it is in relation to the rest, being all bounded on one side by the sea-shore, and by mountains on the other.

So far as I could learn, no divisions have hitherto been established in the county of Inverness, into districts for holding courts to determine disputes relative to small debts, by the Justices of the Peace, under the late Act of Parliament. There are four Sheriff-courts;

one established at the county-town, another at Fort William, and two more in Skye and the Long Island. The town of Inverness is the most northerly station visited by the Court of Justiciary, in their circuits twice in the year, by the Judges, to administer justice in cases which are for the most part of a criminal nature.

SECT. III.—CLIMATE.

THE climate of the county of Inverness is, in one respect, similar to that of all the rest of Scotland. On the west coast, the rains are heavy, and of long continuance. The winters are mild; and when snow falls, it soon disappears, owing to the genial influence of the sea-breeze, unless the wind be northerly. On the east coast, the heaviest rains are from the German Ocean; but the climate, upon the whole, is not so rainy as in those districts which are adjacent to the Atlantic. In the notes taken down from one gentleman's communications, it is stated, that Fort William, Inveraray, and Greenock, are the most subject to rain of any towns in Scotland. There is little doubt of the truth of this remark, as applicable to that coast in general, when the wind is westerly. The cause is evident. Clouds carried over a large surface of water, must necessarily contain more vapour, than clouds from a less extensive surface of the same element. Hence the clouds from the Atlantic must bring more rain on the west coast, than those from the German ocean on the east.

This cause of the extraordinary quantity of rain which falls on the west coast of the British isles, acquires

quires additional effect by the altitude of the mountains, and the boldness of the shore on the west, when compared to that on the east coast. In Lochaber, and in all the contiguous districts, the stupendous mountains draw down the aqueous vapour, which is raised from the immense body of water over which the clouds have to pass before their collision with the mountains; but these clouds become in a great measure drained before they reach the east coast.

If the exhalations from a large body of water be more copious than from that which is small; the exhalations from any watery surface must be more abundant than from a surface of land. This is the reason why houses situated on the north side of lakes, are more free from dampness, other circumstances being equal, than those on the south.

In paying attention to the theory of rain, we may easily perceive, that the quantity which must naturally fall in Lochaber and Badenoch, is uncommonly great. Rain is occasioned by the condensation of aqueous vapour in the atmosphere; which happens, when a colder stream of air, meets with air which is more rarified and charged with more moisture.

Air being a fluid, is seldom stationary for any length of time; and all its principal motions are produced by the different degrees of its rarity and density in different places: that from the south is uniformly more rarified; that from the north more condensed. Therefore, in this country, the south-west winds generally bring our heaviest rains, because the expanse of ocean is immense in that direction. In other countries the case may be reversed. There are other collateral circumstances, which ought to be taken into the account. The collision of these opposite streams of air, which

have different degrees of density, are often affected by the local circumstances of a country. Mountains of great altitude, and in great numbers; vallies deep sunk, and abounding with lakes or large rivers, not only contribute to produce in the atmosphere the concussion of these currents of air and render them more violent, but by reason of the excessive moisture of the low ground, afford such a quantity of local exhalations, as occasion a great degree of humidity from below, in addition to what is brought from other quarters. Here then we have a country intersected with vallies in all directions, whose atmosphere is naturally moist in a very high degree, and whose towering mountains produce such irregularities and often such violent conflicts, in the contending streams of air which carry this humid atmosphere, that nothing is to be expected but frequent deluges of rain, more or less copious, in proportion to the united effects of that humidity and of these concussions. Let any man stand on the first elevated ground north of High Bridge, or on the top of Corighearac, and look around him from the public road, very little reflection will convince him, that the region under his eye must be greatly affected with violent rains and destructive mildews.

If these remarks be just, and the fact itself, independent of reasoning, proves them to be so, it necessarily follows, that near the equator and near the poles, there must be less rain than in the temperate zones; the air being uniformly rarified in the one, and uniformly condensed in the other, without occasional intermixtures of air of an opposite quality: unless it be within the tropics, when, by the operation of thunder, the clouds are dashed with such violence against each other, that the rains in these regions are heavy, beyond the

the conception of persons who have never been in these latitudes. Temperate climates are more subject to these periodical vicissitudes in the atmosphere which bring on rain; islands more so than continents; a hilly country more than a country which is champaign; and a mountainous island most of all. Even in a temperate zone, in the same manner, though not in the same degree as in the torrid, after a long tract of dry weather accompanied by a powerful sun, the quantity of vapour collected in the atmosphere by exhalation, is so great, that the powerful agitation of the air and concussion of clouds, when convulsed by thunder, produce our most excessive rains.

Inverness-shire must be equally liable to snow in winter, as to rain in summer. The warmth of the sea-breeze may dissolve it on the east and west coast; but in the interior, the influence of that breeze is very little felt.

In the whole course of my tour through this county, I had not an opportunity of meeting with any tables containing meteorological remarks on the quantity of rain which falls annually in any district, nor an account of the number of dry and wet days. These tables, if constructed with accuracy and for any length of time, would have contained facts to confirm my former reasoning *a priori*, and would serve the purpose of ascertaining the nature of the climate with more precision than the observations of a traveller, however anxious he might be to make inquiry, or careful to look around him on his journey.

At Inverness, and along the sea-coast, the harvest is said to be early. A variety of causes concur to produce this effect. The soil, in general, is of a light texture, and therefore easily stimulated to bring forth
its

its fruits: skilful management is applied in this district, which is aided by the quickening energy of time: the length of the days in that season when the crop is on the ground; the powerful influence of more sun-shine about the time of the solstice, than any county more southward enjoys; more dry weather than any other district of Inverness-shire is favoured with, and the strong reflection of the sun-beams from the surrounding mountains, which always produce a rapid vegetation.

SECT. IV.—SOIL AND SURFACE.

SOME species of soil are formed by the operation of various causes; some may be called original; and some are partly both. In most places clay has been produced by the sediment of the finer particles of earth, or the slerch left behind, when waters which had been almost stagnant have deserted their original bed. This seems to be the immediate cause of all the clay land near the level, and in the vicinity of the sea.

Holme or haugh, also, is evidently a water-formed soil, and is uniformly found along the banks of rivers which have a smooth current, and in floods that overflow their boundaries. At the influx of such rivers into other quiescent bodies of water, the finer haughs are generally formed. Rivers which move slowly, and occasionally overflow their banks, leave for the most part temporary pools in the back ground. The accumulation of soil thus produced, when it is properly drained and cultivated, is either clay, or haugh, which in this instance are so nearly allied to each other, as to form no material distinction.

Loam

Loam is the most common soil in good level countries; and from the circumstance of its being so frequent, the opinion of its being, in most cases, an original soil, seems to be well founded. It has so much of the tenacity of clay, as to retain the degree of moisture requisite for the nourishment of plants, but not so much as to chill, or make them perish. The degree of its fineness or of its approximation to an argillaceous earth, may easily be distinguished by the polish it receives from the plough, when newly turned over. A constant course of tillage for ages, and the application of fertilizing manures, will nevertheless convert any soil into loam. The land adjacent to all the ancient burghs, and contiguous to the groups in which several farmers lived together in one hamlet, according to the old system of husbandry, has acquired, in process of time, the appearance and properties of loam; while the soil, in that immediate neighbourhood, still retains its original, but inferior qualities. Both these soils were at one time the same; but the one, having been more enriched by human industry, has changed its nature: the other having been less improved, retains its original properties, without any sensible amelioration.

Soils of the same nature and denomination may be different in their appearance. There are clays, blue, grey, yellow and red. The loams also are yellow, brown, red and black. Of both there may be other varieties; but these are the most common. The black loam is generally the most fertile; because this soil, having been longest under cultivation, and having been, time immemorial, receiving an addition of dung, which certainly was the primeval manure, has, in the course of ages, acquired the appearance of
dung

dung itself, and is almost equal to it in promoting vegetation. This is the soil which Lord Kaimes distinguishes by the name of garden-mould; and on which he justly bestows such high encomiums. It is the most trusty of all soils. In a wet season, when clay, by being overcharged with moisture, is dissolved into a fluid mire, the loam being more porous, will let the surplus water filter through; and in excessive drought, when the clay becomes as hard as brick, the sponginess of the loam imbibes so much of the dew, as will afford tolerable nourishment to the crop. That kind of black loam which is found in the vicinity of moss, is far inferior to the species above-mentioned. It is also easily distinguished by local circumstances, independent of its inferior quality. The rich loam is contiguous to any soil but moss; whereas the baser black mould is uniformly connected with mossy ground, and often has peat-earth or gravel for a subsoil.

The red loam is for the most part incumbent on red friable rock, which, although more original and less indebted to industry, than the rich black mould, yet when properly wrought, forms a very productive soil. When the rotten crust of rock, which is easily separated, comes off in small lamina at the surface; these, by the action of the plough and harrows, crumble down into minute particles, something a-kin to rock-marl, and by the influence of the atmosphere, form a fine rich soil, which will make excellent returns. The red loam is the natural soil of whins or furze, and not unfrequently of ferns also. Whins do not penetrate so deep into the ground as the other; yet in Glenspian, at Blarour, the farm of Baron Norton, I saw the roots of fern five or six feet down below the surface. The upper stratum was a red loam, and a dead sand below,
which

which no doubt was easily penetrated by the roots of fern; yet one would suppose, that in these circumstances the plants must have perished for want of nourishment: some of the operations of nature however are to us unsearchable: there is in plants as well as in animals, a principle implanted by the Creator, which we must call instinct, that directs them to select the food congenial to their respective natures.

Till, in its original state, is very barren; but when turned over and exposed to the alternate action of frost and thaw, of drought and rain, with the other ameliorating effects of the atmosphere, and withal stimulated by calcareous manures, it becomes a strong though stubborn soil. Like all other soils, the longer it is wrought, under a judicious course of management, it becomes more kindly; yet the original nature of till, which implies all the bad, and few of the good qualities of clay, is seldom completely removed.

Sandy and gravelly soils are so similar in their original formation and characteristic properties, that they may be classed together. Sand is separated from stones by friction, and acquires its size by the stream which carries it down: hence we find it deposited in regular strata, wherever these streams suffered it to subside and remain at rest. Gravel is formed by the attrition of stones in the same manner. What remains is gravel; what is worn off is sand. When the motion has been long continued, or frequently repeated, either by a current or by the plough, the gravel, whether greater or smaller, acquires a globular form.

Argillaceous earth or clay, and haugh, as observed in the beginning of this Section, are produced by the same agent, but operating upon a different substance. The former is composed of the finer particles of earth
carried

carried to a considerable distance, and deposited in strata. The more buoyant these particles are, and the nearer they approach to the gravity of water, the farther they are carried, and the soil they compose is so much the richer. We need not be surprised at finding particles of earth so minute, as to have only the gravity of water; for when the sun shines through a window, the least motion in a room makes particles of earth float even in air. On the other hand, a stream more powerful in its current, deposits sand and coarser particles of earth in beds, in the first flat, where their specific gravity enables them to remain; the coarser always below, and the less coarse above. This process forms a soil, not so rich, nor cohesive, nor ductile, as the clay. Thus we find that a gravelly soil, a sandy soil, the soil called haugh, and a clay soil, depend upon two united causes—the strength of the stream, and the lightness of the particles of which they are composed. Water is the immediate agent in forming them all.

To persons of long experience in the management of land, and well acquainted with the appearance and properties of the different soils, these remarks may appear superfluous; but this Survey is intended for general use, and may fall into the hands of young men, who are about to commence farmers for the first time, and are anxious to know something of the nature of the land on which their success in life depends. A merchant studies to be well acquainted with the value of the different commodities he is about to vend, and what they will bring in the market; otherwise he cannot succeed. So ought a farmer to study the relative value of different soils, no less than that of grain.

It is perhaps impossible, and at the same time unnecessary,

necessary, to draw a precise line of distinction between all these varieties of soil: they run insensibly into one another: their boundaries are often blended, or very faintly marked; and their qualities intermixed so much, that the most discerning cannot say with certainty in all cases, where the one begins and the other ends. They may be analyzed, to satisfy a philosopher; but to common observation, they are frequently like the colours of the rainbow, or the shades of day and night, at the dawn or twilight, in which the exact limits of each cannot be ascertained.

We find clay generally bounded by haugh in level ground; where a declination takes place, it is adjacent to loam. Sand is generally in the confines of haugh; and gravel not far removed from either, if the ground be low. Till being more original, and less dependent on second causes than any of these soils, is found occasionally in all situations, from the summit of the mountain to its base.

In the county of Inverness, a very great proportion of the surface is covered with heath. Some persons are of opinion, that thirty-nine parts out of forty are clad with this russet hue. It is however a pleasant reflection, that the dominion of the heath is daily losing ground, by the progress of agriculture and the industry of the inhabitants. One might infer from the general texture of the soil, that the shire of Inverness would abound with this barren plant. Heath grows always on land which is naturally poor; and although such a soil be brought into cultivation, it will nevertheless have a tendency, when neglected, to resume its former covering. The industry of mankind will banish heath, and introduce verdure almost upon any spot; but if the men are removed, no species of cattle,
not

not even sheep, are able to prevent the heath from regaining its possession. Till is the soil in which it delights; sand is too weak to carry a plant which requires so much nourishment; and deep moss is too much overcharged with moisture to render it vigorous. There is indeed a stratum of moss on the surface of land where heath abounds; but this stratum is thin; is formed by the leaves and other deciduous parts of the heath itself, in the course of ages; and has uniformly a body of till, more or less barren, for a subsoil. The region peculiar to heath, and the altitude at which it grows, is not great, considering the frequency of its appearance in northern latitudes. While the warm valley, on the one hand, which enjoys the fertilizing influence of a placid stream and of a powerful sun, is too rich a soil for this plant, the higher summit of the mountain is, on the other hand, too cold, too barren, and too much exposed, to be the favourite soil or climate of heath. Fungous moss, the most barren of all plants, and the least capable of affording nourishment to cattle, occupies these summits. The heath grows mid-way up hill, while the skirts and the vallies below are destined for grass and corn. Thus the very covering given to the mountains, demonstrates the benignity of Providence: what is nearest to the habitation of man, is best adapted to his support; what is nearest and most accessible to his cattle, affords them most nourishment; and the least productive part of his ground is removed to the greatest distance.

In some low plains of till, or gravel, or sand, where the surface is too flat or too distant from the higher ground to admit of brooks, the surface is covered with a short stunted heath. If till be the subsoil, the
heath

heath is mixed with some piles of coarse grass, by means of the rains and dews, which do not hastily lose their effect; but if the gravel or sand be pure; having little or no mixture of earth, the rain filters through, before it has had time to produce any effect on the surface; and the dews are too feeble and transient a refreshment, to counteract the sterility of the soil. In these situations nothing is to be seen but one continued field of heath; because the soil is the most barren of all, and most difficult to be rendered productive. Even Scotch firs, which grow almost in any soil, will not thrive in it; of which instances might be given in different counties.

A very great proportion, no doubt, of the county under review is covered with heath; yet a considerable tract is under wood; much of the surface is rock; and nearly as much is covered with water. It is time however to turn our attention to land which is naturally adapted to carry grass and corn:

1. *Clay*, in a pure state, is but a small proportion of the soil in the county of Inverness. Along the river Beaully, where the stream is placid near its confluence with the sea, and on the side of the firth of that name, especially round the skirts of the eminence of Kirkhill, there is a certain extent of a rich blue clay, producing the different crops peculiar to such soil in the southern counties. At Fingask there is a whitish soil, which is denominated by one of the most intelligent farmers in that country, a clay loam; in regard to its being more pervious to water, and therefore sooner dried than clay, while at the same time it assumes, after the plough, all the glittering appearance of real clay.

About Inverness; and down the border of the Murray
 Firth.

Firth, where creeks and bays abound, in which the tide ebbs and flows very gently, some small fields of a clay soil present themselves; nevertheless the proportion which that species of soil bears to the general extent of the county, is very inconsiderable.

2. *Haugh* is more frequently to be met with, and the fields of it are far more extensive, than any other valuable soil in the county. In the whole lordship of Badenoch, from Kinrara on the east, to the place where the Spey descends from the hill of Corrigearac, a tract of more than 20 miles, haugh abounds almost without interruption, on both sides of the river. The swells in the lower grounds are few. The whole district consists of a parallel range of lofty mountains, whose skirts have a great declination; and a dead flat spreads out below in the bottom of the valley, reaching in general to the bases of the opposite mountains. This flat, in which the river flows, is a deep, rich, water-formed soil, except where the current is strong, and beds of gravel are accumulated. The river is indeed much confined by rocky ground, in one spot, between Bancher and Cluny, which forms an exception to the general appearance of this country. No soil of this description can be richer than the haughs of Cluny, of Pitmain, of Gordon-hall, of Belville, of Dell, and other places. In many parts of this tract, the natural hay is above a foot long, and as thick and close as it can stand.

At the confluence of the Roy and Spian, there is a haugh below the house of Keppach, of a very superior quality, and in the highest state of cultivation. From the junction of the last-mentioned river with the Lochy, this species of land is frequent, on both sides of the

the latter river, in the course of several miles, until the Lochy is discharged into Lochiel at Fort William.

The head of every loch or arm of the sea, on the west coast, where they receive their respective brooks from the vallies behind, have less or more of this kind of soil, all the way from Moidart to Glenelg. When these brooks contain a considerable body of water, and flow into the ocean with a gentle stream, the haughs, as might be expected, are larger, especially at the head of Loch Moidart, Loch-nan-ua, and at Glenelg; at the head of Locharkaig also, in Glen-dessary; at Aonach and Achlean, in the upper part of Glenmoriston. In the environs of Loch Oich, into which several rivulets descend besides the river Gary, there are patches of haugh, but very much disjoined from one another.

The river Oich, which falls into Loch Ness on the north side of Fort Augustus, has not such a long course from the one lake unto the other, as to collect much sediment, nor such a gentle declination at its entrance into Loch Ness, as to form a haugh; but the river Tarf, which enters that lake on the south side of the garrison, collects much soil in its descent from the mountain of Corrighearac, which it deposits, where it flows into the lake, with a gentle current, and thereby forms a beautiful plain of rich haugh.

Along the course of the river Moriston are various spots of this soil; and below the mansion-house of Invermoriston, where that river is lost in Loch Ness, there is a plain of moderate extent, consisting for the most part of this soil, in the management of which, Mr. Alexander Grant, the land-steward, discovers that his judgment in the cultivation of ground, is not inferior to his discretion to strangers.

In the bottom of Urquhart, by the sides of the river, but more especially on the south side, soil of this description is frequent, and abundantly productive; that next to Loch Ness is the richest. While we ascend the valley by this river, different patches appear in the vicinity of a small lake, where the rivulets enter it from the mountains: but at the head of the glen, the haughs are both extensive and fertile. The declination is so little towards Corrimony, the mansion of Mr. Grant, that all the surrounding brooks, in three-fourths of the whole circuit round the plain, deposit their riches from the neighbouring hills, and form a soil, to which nothing is wanting, but climate, to enable it to carry any species of grain cultivated in Scotland. The land is managed with great professional knowledge, and yields the most luxuriant crops both white and green: an evidence that gentlemen of a liberal education are the best of all farmers, when they turn their attention to the improvement of their property.

Strathglas is similar to Badenoch in various respects, besides being all either hill or a dead flat of land formed by water. It is different, however, by reason of the valley in the former being much narrower, and the hills more abrupt and more barren. The river Glas has a slower current than the Spey, which prevents its devastation on the banks, and the occasional formation of beds of gravel. Nevertheless, these advantages are counter-balanced by another circumstance, which, unless it be prevented, may ultimately prove ruinous to the low ground, in the bottom of the glen. The river Farrar, which rises in Ross-shire, falls into the Glas, almost at right angles, below Mr. Chisholm's castle. The former being a rapid stream, has already carried down so great a quantity of gravel, sand and other

other loose materials to the point of their intersection, that the latter is regorged to such a degree, that its current, above their junction, is hardly perceptible. By the influence of this cause, it is probable that the plain below Mr. Chisholm's house has been originally formed, and is daily gaining additions, as appears from the lower skirts of that plain being neglected, and reckoned not worthy of cultivation : by the increasing operation of the same cause, the course of the Glas may be so much stopt, in process of time, by additional accumulations, unless guarded against by human industry, that it will become deeper and more dammed every year in the back ground, until it form a lake, covering the bottom of the Strath, so far as the land is a flat plain. The tendency of these concurring circumstances to produce this effect appears already, by the Glas having assumed, in some places, the form of a serpentine lake, both in breadth and stillness, by the extent of low meadow ground, which seems to be occasionally overflowed, and by the pools and swamps left when the floods retire. Many instances might be given, where rapid waters falling at right angles into lakes, make them cover more and more land, or by falling into rivers, make them stagnant, so as to become narrow lakes, or of their cutting narrow lakes in twain : but because the same quantity of water nearly continues to escape, the operation of the cause is not discerned upon account of the slowness of its progress, in producing the effect. Below the junction of the Farrar and Glas, there is also much flooded land, and an island, consisting of soil of a similar nature. On the north side of this island, it is probable the river Glas did flow at one time, until its course was gradually thrown

southward by the increasing accumulations of the other river. The expedient for reaping the full benefit of the ground is the same in both cases—cutting the bar formed by the Farrar on the bed of the Glas, and likewise giving vent to their united stream, below the island of Agaish. This has been done in a hundred similar situations, and it ought to be done wherever it is necessary.

In the Aird there are few haughs. On the banks of the Ness there is some soil of this complexion; but that river issuing pure from Loch Ness, carries down stones, gravel, and sand, rather than fine earth; the weight however of its water, which flows with a magnificent and powerful stream, under a bridge of no fewer than seven arches, has forced such a quantity of these materials into the Murray Firth, in a transverse direction, that a long and large bar or promontory has been formed three fourths across this arm of the sea, at the ferry of Kessack. It may be easily understood from some circumstances, where these promontories are formed by second causes and progressively gaining upon the water. In this case they are always low flat land, and commonly of a triangular figure; in digging down there is no rock; but beds of water-washed gravel, or sand, present themselves: a stream flows in the direction of the angular point most remote from the land: and at this angular point the body of water encroached upon is much deeper than elsewhere contiguous to the shore. All these marks concur to shew, that the promontory at the ferry of Kessack, is progressively formed by the river Ness; for though I took no soundings, yet it is said, that vessels of several hundred tons can moor at the angular point within a few feet of the beach. The
rapidity

rapidity of this ferry during every flow and ebb of the tide, must therefore be gradually increasing.

The tide way above the strait, is called the Firth of Beaully; that below is named the Murray Firth*. When this growing headland shall, in future ages, approach so near the opposite shore, as to allow no more water to escape than what is brought into the Firth of Beaully from the higher grounds around it, that Firth itself will one day become a lake, first of brackish, and afterwards of fresh water. But the completion of this effect refers to a period so remote, that to speak of it at present may seem paradoxical. Yet it is no paradox to say, that in the tract of the Caledonian Canal, in that neighbourhood (where people suppose the river Ness had never formerly flowed, with equal probability, as any can suppose at present that it will not hereafter proceed farther, and choak up the Firth of Beaully) the beds of clean sand and gravel met with below arable land, and formed heretofore by the same river, did incommode the digging for the bason of the canal to a proper depth, by the water filtering through these beds, wherever the excavation descended below the surface of the river. It is to be hoped that the ingenious conductors of that great national undertaking, will remedy this and all other inconveniences, which in this place can only be temporary; as it cannot exist after the canal is filled with water to carry vessels.

* The narrowness of this ferry, which may be about half a furlong over, and the quantity of water which has to flow into the Firth of Beaully and back again into the Murray Firth at every tide, is so great, that the current is very powerful. Hence the name of the ferry, which, in the original language of the country, signifies a *rapid*. The common appellation of rapid brooks in various parts of the Highlands, is *Kassie*.

Even the cataract of Foyers has formed a pretty little haugh, on the south side of Loch Ness, where Mr. Fraser has his domestic farm. Stratherrick has little of this soil, except some patches on the sides of the lakes of that district. Along the river Nairn there are small haughs in different places, all the way from the head of that Strath to Cantray, where it joins the county of Nairn.

Near Moy-hall, and in some other places of Strathdearn in this county, there is water-formed soil of this nature. But it is time to draw this article to a close; lest my anxiety to do justice to the commission of the Honourable Board, and my propensity to take down remarks, which I had collected with so much fatigue, may have led me into a discussion, which to some persons may appear too minute.

Let it suffice therefore to say, that in every instance where a muddy stream is stopped, or even retarded in its progress, a rich mould is regularly collected, which is more or less fertile, in proportion to the richness or minuteness of the particles of earth, subsiding by means of the stillness thus produced. Hence the rich fields of low land at the head of most lakes, while no such fields exist at their outlet: hence the flat triangular promontories on the sides of lakes, where brooks are discharged: hence the number of mouths formed by some of the largest rivers in the world, where the stream, not being able to force its way through the accumulated sand and mud in one channel, is forced to break in upon the pliant soil of a bank, and find a new channel: hence also the bars at the mouths of all rivers which flow in a narrow bed, and with a softly gliding current, into the sea: the conflict of the stream on the one hand, and the waves
or

or tide on the other, give opportunity to the sand to subside and form bars.

In all hilly countries, and there is none in Britain more so than the shire of Inverness, where mountains and vallies constitute so much of the surface, this species of soil named haugh, must be very frequent : otherways what has become of all the earth, which these thousands of torrents have carried down, in the lapse of time, from the deep ravines with which the face of every mountain is furrowed? All this soil must be somewhere. It cannot be annihilated by a less power than that by which it was created. A single particle is not lost. Where then is it gone? It is just brought nearer to the hand of man, and refined by the instrumentality of water, as a secondary agent, into a more fertile mould, fitted for the operations of human industry, and prepared to yield sustenance more copiously to the human race.

3. *Loam*, properly so called, is very rare in the county of Inverness. A hilly country abounds in haugh, wherever flat ground is found. A rich country, which is not hilly, generally abounds in loam: Ascending any where from a plot of clay to the nearest upland, you commonly meet with loam; but if you ascend by the course of the stream which waters that country, you meet with haugh, then with sand, and gravel and till. Loam is also found, where no clay is near.

A yellow loam prevails in Glenroy; at Keppach; besides some other places of Glenspian, particularly the farms of Baron Norton, and of the Rev. Mr. Ross; at Inverlochy, and in various places northward to Loch Lochy; in the confines of Loch Oich, above the haughs;

haughs ; in the lower parts of Urquhart, particularly the farm of Capt. Grant, near the castle ; at Corrimony ; on the borders of the clay land in the Aird, the soil is with great propriety denominated a rich loam by the gentlemen of that district ; in the circuit about Inverness ; at the house of Culloden ; in some favoured spots down the coast-side, wherever the country is low and free from downs ; a considerable proportion of the farms of Governor Stuart at Fort George, and of Mr. Macpherson at Ardersier, where the style of farming is in proportion to the soil. Wherever the soil is good in Strathcrie, as at Farraline and Gortlec, it is a light loam on a bed of gravel ; in some parts of Strathnairn, such as Cantray ; a little in Strathdearn ; the good soil in general in Strathspey is loam, where we meet little or no haugh ; the upland in Badenoch, next to the water-formed soil, is loam : which to avoid a tiresome minuteness, may be applied as a general remark to any place, where the land is tolerably fertile, without clay or haugh.

4. *Sand and Gravel* form a part of the soil of Inverness-shire in a great variety of places. This kind of soil is most frequent within the reach of the inundations of rivers, where they now flow, or may be supposed to have flowed, at any former period ; nevertheless gravel or sand occurs in the composition of the soil of a great proportion of the upland, where no regular strata of either is to be found.

Immediately upon entering the county at the ferry of Ballachulish, the soil is a mixture of sand and gravel, with various proportions of earth ; of which kind there is more land in the county of Inverness than of any other. Upon the side of Lochiel, this is
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the general complexion of the ground: upon the whole west coast; in the tract of the canal from beginning to end; in the vicinity of Fort Augustus, in Glenmoriston; from the bridge of Urquhart to Corri-mony, the land in general is light, but very productive, with the exception of the places already taken notice of, where a stronger soil prevails. Through the whole length of Strathglas; in the higher part of the Aird, of Kirk-hill, of the neighbourhood of Inverness; the swells toward the eastern extremity of the county; the soil is generally of this description. But ascending from Fort George to Croy, the land in many places is very poor, having very little earth in proportion to the gravel. Strathnairn, and particularly Strathdearn, so far as they are within this county, abound with this light free soil. A great proportion of Strathspey and of Badenoch is of this complexion. It is not very interesting, and therefore unnecessary, although it were possible, to enumerate every patch of land, in this county, where sand or gravel predominates; and even with regard to those which are taken notice of in this article, as pertaining to that denomination, they must be understood with all the exceptions of clay and loam formerly mentioned.

5. *Till*, next to a sandy or gravelly soil, is the most common in this county; and if the mountains are taken into the account, the proportion of Till exceeds all the other kinds taken together; while, for the reasons already given, very little is found in the lowlands: the skirts and face of all the hills, are either wholly till, or have it for a subsoil, whether the surface be clad with grass or heath. All spouty land, which throws out springs to the surface, on the sides
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of hills, is universally till. The hollows behind these hills collect water, which seeks a passage below ground until its progress in this direction be interrupted by a bed of till or a ledge of rock, which being impervious, throw out the water to the surface, where it dribbles down in small but numerous rills. That large tract of Scotland, to which this Report refers, abounds throughout in heights and hollows; consequently the extent of spouty land, where the inequalities in the surface are so many, must be very considerable; and this spoutiness, independent of every other consideration, demonstrates the great extent of Till in the county of Inverness. It would therefore be an endless task to describe the places in which it occurs.

6. *Moss, Moor, and heathy Ground*, in the opinion of some intelligent persons, cover two-thirds of the shire of Inverness. If one fortieth only be arable land, according to the account formerly taken notice of, there are probably twenty-six of the remaining parts covered with heath, incumbent on moss, or a till bottom. Heath generally produces a crust of moss on the surface, whatever be the soil below. The land occupied now or formerly by natural firs, assumes the same appearance, because they seldom grow so closely, or shade the ground so completely, as to destroy the heath.

While such a great proportion of the county is under the possession of this plant, which is gloomy in its appearance and barren in its nature, it is an object of considerable importance, to devise means either of converting it to some useful purpose, or of circumscribing its boundaries.

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When the heath begins to spring towards the beginning of summer, cattle are very fond of the tender shoots, provided the heath be young. This ought to suggest the propriety of burning it down every third or fourth year. The shoots of young heath come forth more early, advance to a greater length, are more vigorous in every respect, and consequently more nutritious, than after it is old. The ~~add~~ small as they are, of the withered grass, of the fungous or of the solid moss at the root, added to that of the heath itself, give a kind of top-dressing to the ground. All this melioration of the soil is aided by the dung of sheep, which resort in great numbers to the spot that had been thus treated, and crop greedily the tender shoots of the new-sprung grass and heath. The most stubborn and barren heath, will by this management change its nature, and the soil on which it grows, become gradually more productive of grass.

In the third or fourth year of its age, the heath may be profitably cut down for hay, when in full bloom about Lammas. If the surface be tolerably smooth, a strong short scythe may be used; but in coarse ground this operation must be performed by the sickle. The hay may be dried in the same manner as grass-hay, and laid up in huts, where it is to be used. This practice is eagerly recommended in a manuscript, which Lord Sheffield, late President of the Board, did me the honor to send from London, besides all his other good offices to assist me in this arduous Survey. We all know that heath-hay is carefully saved in the north of Europe, which, with the branches of trees, occasionally lopt off, allays the cravings of hunger to cattle in a rigorous winter.

Even in our own climate, when ferns are cut down

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in the month of July, for litter to horses, it is well known, that if the ferns had been properly preserved, the horses will begin to eat them, provided the hay at any time were spent in their racks.

High mountains are not covered with heath to the summit; nor are the mountains in all the districts of this county equally gloomy and forbidding. The hills of ~~Lochaber~~ are a good mixed pasture of grass and heath interspersed. Where this mixture takes place, the heath is naturally short and fine, and comes into the same bite with the grass; which in all cases affords a hearty and nourishing food for cattle. Glenivaish is of this description, though it forms the skirts of the highest mountain in Britain; the hills of Arasaig, freckled as they are with rocks; those of Glendessary; those of Glenpian; those of Glenquich; those on the north of Glenspian; those of Glenroy; those on both sides of Loch Lochy, particularly at Lowbridge, where the hills in general are as green as a meadow; those on the sides of Loch Oich, to its northern extremity, where the dark brown heath begins on the west; those in both Glenelgs; those in the head of Strathglas, and in the braes of Badenoch; in all which places the hills are more or less of the same hue, and yield most plentiful pasture. But on the confines of Strathspey very different is the aspect of the mountains: at the head of Strathdearn and of Strathuaim, in Stratherie, on both sides of Loch Ness; from behind the head of Urquhart, and across Glenmoriston to the source of the Oich, and in other districts, the mountains are gloomy, black and sterile, in many large tracts, to such a degree, that in the distance of twelve or fourteen miles, hardly any verdure is to be seen, except where a solitary rivulet, by its

its occasional flooding, produces some green ground in part of its course, to relieve the eye.

In all the mosses, the roots of fir-trees stick up, which are frequently dug out by the inhabitants and dried for fuel: so plenteous are they, and so singular in their appearance, that Mr. James Grant, factor to Sir James, told me, he had seen in Strathspey three tier of fir-stocks directly above one another in the moss; where no doubt that wood had thrice come to maturity, after every former growth had, by its destruction, formed a soil capable of nourishing the succeeding forest. Upon any other supposition, these stocks must have been beside one another, but they never could have been perpendicularly above each other. What a length of time must have elapsed, before the spoils of one forest, mouldering down into a state of decomposition, could have produced a soil of such solidity and depth thrice repeated in the same spot, as could carry a wood of the same species and magnitude!

Almost all the deep mosses of this country are situated on land, which is more or less elevated above the general level of the vallies, and lie on gravel, or stones, or till. None of these fields of moss, except a patch at Corpach, and very few more, are in the bottom of a valley, like the famous Flanders moss of the county of Perth; nor like it, have they in any case a bottom of rich clay.

Moors, by which is here meant, low lying ground covered with short heath, which grows upon a thin stratum of peat-earth, with a subsoil of gravel or till, are both extensive and numerous within the bounds embraced by this Survey. A moor incumbent upon till may be made a good soil; though at first it be hard

hard to work, owing to the stiffness of the subsoil : but when this soil is turned over, and minutely broken by repeated ploughing and harrowing, the mixture of the mossy surface with the other soil, helps to correct the natural barrenness of both when separate. The tenacity of the one is lessened by the porousness of the other; and the spongy nature of the latter is corrected by the cohesive quality of the former. The genial influence of the atmosphere is always provided by an unseen hand, to assist the industry of cultivation.

A moor upon gravel, with a proportion of earth, which seldom fail to be united (because moors are remotely situated from water-washed gravel or sand) ought to be broken up in the same manner as the moor upon till; but when improved, it always forms a weaker soil. The stratum of moss, being intimately mixed and compounded with the other, helps to retain the dew and rain, which to this kind of soil is indispensably requisite; and notwithstanding its lightness, it becomes, by being duly wrought, a kindly tender mould, well calculated for green crops.

It is only by the present generation, that moors began to be cultivated, upon a large scale in Perthshire; and as but few trials of this kind have hitherto been made in the county of Inverness, except in the close neighbourhood of the county town, my duty and my inclination lead me to point out the practice of the former county, for the imitation and benefit of the latter.

Land of this kind is sometimes brought into cultivation, upon a large scale, by opulent proprietors; and at other times, on a small scale, by persons in very moderate circumstances. Where lime or marl are easily obtained, these stimulating manures are spread

spread on the surface, and allowed to remain in that situation for two or three years; in which time their virtues shall have been communicated to the soil, and, by the increase of grass, have abundantly compensated the interest of the money laid out for the manure, even before the moors are broken up. If there be stones above ground, these in the mean time are blown, and carried away to the lines of enclosures. At the end of this period, and on the approach of winter, after the harvest work is finished, the plough is put in, which must be made stronger than ordinary and drawn by a powerful yoke of cattle, either horses or oxen, as most convenient. During the operation of ploughing, every hidden stone that can be moved without powder, is turned up on the surface, by a man or two, who attend the plough. The fixed stones are carefully marked by a stick put down beside them, or in any other manner, until they be blown and removed. This being done, the field is sown with oats in the proper season. If the soil be somewhat good in quality; and not stunted in manure, the first crop is tolerable; the second much better. I have known the second crop return six bolls from the acre, by this management. The third crop ought always to be turnips or potatoes in drills, after the land has, by the necessary ploughings, been reduced to a proper tilth. Several hundred acres of waste land and moor have been reclaimed by this process, which originally was not worth 1s. an acre, but the fourth year was lett at a standing rent from 14s. to 18s. according to its quality, and continues in the situation of other arable ground, increasing in value by the alternate changes of grass, corn, and cleaning crops.

This is evidently the least laborious mode of bringing
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ing waste land under crop ; because you have a crop for every ploughing : yet attention must be paid to laying down the ground in grass with the fourth crop immediately after the fallow, and that the top-dressing at the beginning be plentiful. If the heath be strong, which, although it seldom happens where the subsoil is gravel, nevertheless is most frequently the case where the subsoil is till, this long heath may be destroyed in any of these three ways, either by burning it down, or by pulling it up by the roots, or by allowing the grass to grow up around it for some years, which will gradually extirpate the heath, as I suppose for want of air. Be the cause what it will, there is no doubt of the fact : that this unwrought soil produces a coarse grass, and that this long grass, if not kept down by being constantly depastured, but allowed frequently to attain its full height, will wear out the heath, as it were, by gradual decays. I know various instances, particularly two fields, which were every way similar and contiguous, only separated by a stone wall. The one being an enclosure, was saved every season, during summer and autumn, for winter foggage ; the other was daily pasture, and therefore the grass nipt up close to the earth. The result was, that the heath disappeared in the former, which has since been converted into arable ground ; while the latter remains still under heath, and is the same poor pasture as formerly. The question is, what is the cause why the heath disappeared in the one field, but continues in vigour in the other ? There was no apparent cause, except the long grass crowded round the heath during six or eight months. But still the question remains, how does long grass extirpate heath ? The only answer, which does satisfy me, is the *want of air*.

We

We often see fields of heath killed, by being covered with snow about the space only of two months.

All plants seem to require more air for preserving their life, and even their health, than is generally imagined. Both vegetables and wood of every kind are subject to the law of respiration no less than animals. At present let it be only remarked shortly, that whether it be in natural woods or in plantations, if the young trees grow very close together, those on the skirts do uniformly lean outward for more air, if they are of the pliant kind; but if not of the pliant kind, such as firs and planes, they can only send out their branches. Those, on the other hand, which are not in the extremities of the plantation or grove, whether they be of the species that will bend or not, seem to have no remedy in making a struggle for their life, but to shoot up their tops faster than ordinary; which universally happens; but in this race for longevity, those which rise highest get the mastery; and those which are lowest and left behind, soon decay, even although they be not within the reach of being touched by the others, and although they might be thought otherways to have plenty of air.

May we not conclude, that heath is as much annoyed by the grass which grows up every where through its branches, and on all hands around, coming in contact with it, as other plants are, in circumstances apparently less injurious to their growth; and that heath may be choaked and killed by want of the quantity of air requisite to its existence, no less than these? This is a very curious occurrence in the natural history of plants, and when duly investigated and considered, we can hardly refuse to the species in general a sensitive power, although it does not operate so instantly

neously upon them, as upon that which has got the name of the sensitive plant.

In reclaiming moors, some improvers recommend to trench the land with the spade, which at once completes the reduction of the soil into a proper tilth. This is the practice about Glasgow, and in the neighbourhood of Perth towards Coupar.

Persons of considerable experience in the cultivation of moors, recommend the following process. Begin by removing the stones which appear above ground, in the manner already described; then yoke a strong plough upon the moor, when the labours of spring are finished. Let the ridges be broad, and the stones or other obstructions cleared away, as they occur. Continue cross ploughing and harrowing, at proper intervals, that the land may be thoroughly broken by the beginning of next summer. If a decent crop of drilled turnips can then be raised on the field, the undertaker may congratulate himself on the success of his experiment. The turnips ought, if possible, to be eaten upon the ground. But if the first crop of turnips should fail, a second crop of them ought to be tried the ensuing season. Turnips are recommended in preference to potatoes, because they thrive on a poorer soil; because they afford a more complete cover to the ground; because the loss, by their failure, is not so much felt as an article of provision; and because their being consumed on the ground will help to enrich it for a future crop of grain and grass-seeds. Not only the turnips, but the first crop of grass, ought to be depastured by sheep, taking care that not so many sheep be put upon it as will eat the grass bare; for in this case, the heart or germ of the plants may be in hazard to be bitten off, or the very roots pulled up.

When

When moors cannot be cultivated upon the large scale here alluded to, by reason of their distance from the residence of proprietors, or their negligence, they may, as was said above, be rendered productive, upon a narrow scale, without much trouble or expense to the owner.

Let him be supposed to possess so much humanity and attention to his fellow creatures, so much patriotism towards his country, and so much regard to his own interest, as to employ a proper person to set off his moor in lots of three or four acres, adding to each lot, a small patch of land already in tillage, as contiguous as possible to its lot of moor. If the situation of the ground admits, a straight line may be drawn at the verge of the moor for houses and gardens, on that side next to the cultivated land. But unless the houses can be set down in a regular manner, as being more pleasant to the eye, this regularity must be sacrificed to convenience, which is the great object in view, next to the improvement of the soil, and (may I add) the preservation of the people. At all events, every house ought to be stationed on that part of its lot of moor, adjoining to its share of the cultivated ground. The conditions ought to be moderate; such as these—an adequate easy rent for the land already cleared; no rent, or at least very little, for the moor, unless it be better than common, until a whole acre shall be under crop; an obligation that this shall be done in two or three years, and so on progressively; the rent for every successive acre of moor ought to be very moderate, as a spur to industry; timber furnished for the house, without payment, and perhaps a little aid in money, provided it be substantially built; and the garden enclosed by the proprietor, but the moor

enclosed by the occupier, for which the stones found in the progress of cultivation will probably suffice.

The reason for proposing to give an adjoining patch of arable ground at the commencement, is to furnish the possessor with some crop for the support of his family, whenever he sits down; while the future increase of his support must depend on his own industry. To set a poor man, with his wife and children, down upon a wild bare moor, without a bit of cultivated land to strengthen his hands in the outset, implies a degree of insensibility, which fills a person with horror. Yet one instance or two of this want of feeling did come in my way, in the course of this Survey. It is to be hoped, in justice to human nature, that there are no more in all the county; therefore these shall not be named. This general plan of colonization upon the waste land of Inverness-shire, it is my duty to pay particular attention to, in its proper place. There is no doubt of its being the true scheme of increasing the real value of the gentlemen's property, and of putting a fair stop to emigration, provided it be adopted on generous principles.

Although it were in my power to give a correct detail of the improvable moors in the county under review, it might prove tiresome in the perusal. Not the smallest doubt remains in my mind, after the most careful attention, that the bounds of such moors as have a proper climate, are equal to *three-fourths* of the present arable and meadow ground. On all the promontories which run out into the Western Ocean, where they are free of rock, are moors of greater or less extent: considerable tracts of moorish ground are on the sides of the Lochy and Spian rivers; on very low ground between Loch Oich and Fort Augustus;

at

at the entrance into Urquhart from Invermoriston; above Loch Meikley, in the braes of Urquhart; at the western entrance into the Aird; betwixt the church of Kiltarlity and the house of Beaufort, a most inviting plat of ground, just at the proprietor's door; betwixt Inverness and the nearest end of Loch Ness; in the parish of Croy; the extensive moor of Culloden, and westward to Stratheric; many miles in that strath; in the head of Strathnairn on both sides of the river, and down the north side, to the improvements of Cantray, which must excite the admiration of every sensible man who examines them, by affording ocular and decisive evidence of what can be made of such moors, to what account they can be turned, and what beauty our other black and barren spots may, by human industry, be made to display; in Strathispey, near Avemore; and in many other places besides these, are moors of less extent, which may and ought to be rendered productive; and when rendered so, may support twofifths of the present population, in addition to the numbers of people in the county at this day.

The deep mosses are neither so extensive nor so valuable, nor in such a favourable climate, as the moors of this county. Colonel Fraser of Belladrum alone had a deep moss, under a progressive state of improvement; therefore the culture of that soil shall be past over in silence; but if my opinion on this subject is to have any weight, it may be found in the Agricultural Survey of the county of Perth, with the addition of a single remark in this place. Whatever be the depth of the moss, whether three or thrice that number of feet, let the *surface* water be drained off, by ditches of sufficient depth for that purpose, and at a proper distance from each other, thus throwing the ground

into the form of large ridges. The moss cast out of these ditches may fill up the hollows, or if not needed in this way, may be spread over the surface; then cover the moss all over with the scourings of ditches or the mire by road sides, or any mud or earth that can be got at hand, to the thickness of two and a half or three inches. Without any other preparation, I promise the undertaker, in a year or two, an abundant and much variegated crop of valuable grass, which generally will consist of red and white clover, intermixed with other long and coarser meadow grasses. If the climate be favourable, and the superinduced soil tolerably rich, the produce will be the finer and the more plentiful; and if rye-grass be sown and raked in with this top-dressing, the return will be more immediate. All men in the possession of moss have this mode of cultivation in their power, the poor as well as the rich; and the result is fully established by repeated experiments, under the direction of one of the most successful improvers in the south-west of Perthshire.

In making observations on the general appearance of the shire of Inverness, much light may be thrown on that question agitated by agricultural writers, whether the north or south face of hills be the most fertile? This question resembles an inquiry, whether a grey or a bay horse be the swiftest? In Strathnairn the south side is the best soil, and at the foot of Loch Ness the same; but in Glenspian the north side is the best land; and on the sides of Lochiel the same appearance and distinction of soil prevails; in Stratherie, the estate of Gortlee, which fronts the south, is better soil than what is opposite to it; but in another part of the same district, the quality of the ground, on the estate of Farraline, which has a
northern

northern aspect, is superior to that which fronts it on the other side. When the premises are so vague, and even contradictory, no general conclusion, founded upon truth, can follow.

SECT. V.—WATER.

THROUGHOUT the whole course of this Survey, not a single instance occurred, in which the inhabitants complained of the quality of the water. Many of the brooks appeared to be tinged with moss, but the people on the borders of these had generally recourse to springs, which are all pure and light water. This is what might be expected in a country, whose surface is so irregular; mountains and vallies, hills and dales, lakes and rivers, being blended together from one end of the county to the other: and withal, the climate, which is naturally rainy, increases the quantity, and contributes to the fineness of the quality of the water. In all low countries, where the soil is stiff and cohesive, though we should meet with plenty of water, it is nevertheless slimy and unwholesome, and therefore affects the inhabitants with a variety of endemical complaints. In low countries, where the soil is porous and sandy, the rain filters through whenever it falls; the rivers are more rare, and springs they have none; consequently they must either dig for water, or carefully preserve what falls from the eaves of their houses. On the contrary, in all hilly countries the water is pure and plentiful, which contributes much to the health of the inhabitants.

Springs of a sulphureous quality, issue from the
hills

hills on both sides of Loch Ness. Some chalybeate springs are in Strathspey ; but no other waters of singular virtues have been discovered in this county, according to the best information I could procure.



SECT. VI.—MINERALS AND FOSSILS.

THE limestone of Ballachulish, which requires only to be carried across a narrow ferry, is extremely convenient for that district of Inverness-shire. The price of this lime is nine-pence the boll in shells. Coals to burn the limestone are carried up Linne Loch by vessels, which come to the quarry to be loaded with slates for Glasgow and the other markets on the west coast. Both the lime and slate quarries seem to be inexhaustible. The lime is a bright white, having little sand in its composition, and much calcareous earth. The slate is of an excellent quality, and has been long in request. The face of this quarry appears to be nearly two furlongs in length, and in most places eighty feet high. Fifty men were employed in autumn 1804, and some vessels of considerable burden are generally lying at the quay, waiting for their cargo of slates.

These contiguous strata of lime and slate, penetrate far on the north side of Loch Leven, by Landavra, into the interior of Inverness-shire, and the former rises again above ground in different parts of Glenspian, at the distance of many miles ; and lastly, in the brow of a mountain on the east side of the river Oich. Limestone is also found in Aberhalder, and in Glengary. Lime is much used in the district of Urquhart, which

is

is disposed of at Gartaly, a lime-work belonging to Sir James Grant of Grant. In the districts of the Aird and Kirkhill, fuel is so scarce, that though there is plenty of limestone, the improvers find it cheaper to purchase limeshells from Sunderland, imported at Inverness, than to burn their own. Limestone is also found in the moor three miles above that town, and at Cantray, on the river Nairn. In the district of Strathspey, where the county of Inverness is blended with those of Elgin and Banff, the quarries of limestone are inexhaustible; and the inhabitants have plenty of timber and peats to burn it; consequently it is much used as a manure. In the lordship of Badenoch, lime is discovered in various places, both on the property of the Duke of Gordon, and of Colonel Macpherson of Cluny; but the scarcity of fuel prevents the farmers from deriving the full benefit of that discovery.

Slates are not only found at Ballachulish, but also at Mamore. A quarry of grey slate was opened at considerable expense by the late Mr. Davidson of Cantray, at a place called Aultmore; but after houses had been covered with them, it was found they were so porous as to admit rain. A grey slate of good quality and a large size, is found in the hills near Kingussie. Their weight, by reason of the thickness and breadth, requires two nails, one at each shoulder, to fix them securely on the sarking. But this roof, when properly finished, is very durable, and well adapted to that stormy climate; neither penetrable by the heavy rains, nor moveable by the boisterous winds. Slate of this quality is a valuable acquisition to the new village which the Duke of Gordon is erecting at Kingussie, where the inhabitants must otherways cover their houses

houses with common thatch, which, to their annoyance and alarm, might be carried away by a tornado in winter, when no thatch could be got in the fields. To a favourite village, which is so ornamental, and so beneficial to that part of the property, and therefore enjoys so much of the family's countenance, it would be deemed inconsistent with his Grace's paternal care in other respects, were he to withhold from the feuars this convenience. It is only necessary to open a road to the quarry, for the benefit of the village. Slates of the same quality and appearance are found in different parts of that district, which are preferred to blue slate, because the latter requires to be carried from other countries at great expense, and though nailed on ever so firmly, are apt to be loosened by high winds, unless bedded in lime; which circumstance renders it difficult to repair the roof.

Lead ore has been discovered in the mountain of Benevis; at Inverskaddel, on the property of Mr. Cameron of Fasfern; at the side of Locharkaig, on the property of Colonel Cameron of Lochiel; in Glenagary, on the property of Colonel Macdonell; but no works are carried on at any of these places; nor do the proprietors derive any benefit at present from these discoveries. The mine at Strontian was wrought at one time; was discontinued many years; but is now begun with spirit.

Marl is supposed to be in Loch Meikley, on the property of Mr. Grant of Corrimony. He has discovered a substance, which is analogous to clay marl; and is used on land with good effect.

Favourable appearances of coal have been found upon the estate of Culduthel, near Inverness. This would be a discovery of unspeakable advantage, to a country

country in which fuel is scarce even for domestic use, and where the inhabitants reap not the benefit of their own limestone, for want of coals. In various parts of Scotland, limestone is burnt with peats alone, or with the addition of a little wood. The farmers on the East Coast find their account in using imported lime; but the full benefit of this lime can never extend to the more inland provinces, in such quantities as to produce any considerable effect in the improvement of the country.

Were the Highland Society to bestow some consideration on this matter, in addition to their many laudable efforts for the good of their country, they possess both the intelligence and the means of providing plenty of lime, wherever the stone is found. If fuel be scarce in some parts of the Highlands, there are plenty of streams to drive machinery of any power: and it is well known, that raw limestone, when pounded, is a more lasting manure than what is calcined. This is no untried process. The experiment has been made; and they have nothing to do, but renew the trial: nor does it appear that they can employ their funds, or their exertions, in any other way more for the prosperity of this part of the empire.

Marble of the greatest variety of colours, and of the most beautiful shades, has been discovered in Ben-nevis, on Mr. Cameron's property; and inexhaustible quarries of marble lie untouched in the islands of the county. There are some appearances of black or pencil lead, in Glengary; but these discoveries have not hitherto produced any benefit to the proprietors, or to the public.

The hewing stone on the estate of Lovat, which is of a red colour, takes a smooth polish; but there is

no sand-stone in all the county : nevertheless the common granite abounds in all districts of the shire. The whole rocks are composed of this kind, which is uncommonly useful for all ordinary purposes. By natural fissures, which run in straight lines, and generally at right angles, it is formed into all sizes and shapes, having uniformly a plain surface : and by means of cutters or transverse lines, these stones are easily quarried, and found in the greatest plenty everywhere. They are withal remarkably beautiful, almost as smooth and regular as hewn stone, and therefore well calculated for constructing bridges, walls of houses, enclosures, or any kind of common mason work.

The stone used in building the best houses in the county-town is a kind of dark granite, which is very hard and durable, but has few or no fissures. It is generally found in large blocks, and in many parts of the North of Scotland, the inhabitants have no other stone to ornament their principal buildings. At Aberdeen, and along the coast, or wherever elegance is studied, this stone is in general repute. The manner of giving this hard stone any polish it admits of, is by means of small picks (or pick axes), which are nothing else but hammers with sharp points at both ends, such as millers employ in preparing their mill-stones for grinding. This is the heaviest and most compact stone in this part of Britain, iron-stone alone excepted. The species of granite found in Badenoch, of which Colonel Macpherson was making columns to ornament the front of a new house, is a mixed species, called peasy granite, compounded of white, black, and grey spots, which sparkle beautifully in the sun. The same kind has been used at Castle Grant, for stairs,
doors,

doors, and windows. Notwithstanding the solidity of this stone, and its want of natural fissures, yet it splits very straight by means of iron wedges set in a line, which are struck alternately with a powerful hammer.

Brick clay is to be met with in many places on the coast side. All the bricks required in building Fort George, were made from a clay found in the neighbourhood of the garrison.

CHAP. II.

STATE OF PROPERTY.

SECT. I.—ESTATES, AND MANAGEMENT.

THERE is not a single nobleman resident in the county of Inverness, excepting Lord Macdonald, whose property and house are in the Isle of Skye. The Duchess of Gordon frequently passes a part of the summer at the romantic villa of Kinrara. But although no nobleman has for some ages past lived in the continental parts of Inverness-shire; yet it is favoured with the presence of many gentlemen, who are distinguished no less by their improved talents, and the politeness of their manners, than by the opulence of their fortunes. For the most part they have filled high offices in the army, and now enjoy rural ease, equally respected by their Sovereign, and beloved by their country. The liberal education that most of them received in early life, enabled them to make remarks upon the improvements and embellishments carried on in other parts of the world; their discernment selected from all these, the most suitable to the state of their native country; and their patriotism is at present exercised in applying the most successful modes of cultivation to render the soil of their estates more productive, the face of the country more beautiful, and the people in general more happy, whom providence has entrusted to their protecting care.

Knowing

Knowing with a laudable enlargement of mind, which takes a view of the great commonwealth of mankind (from which it is to be hoped there are but few exceptions), that no man, either high or low, is destined to live for himself alone; that the rich and the poor, the landlord and the tenant, are originally of the same blood, formed by the same Supreme Lord, and accountable to the same Universal Judge; that no man, be his station what it will, ought to have all his concern centering in his own person, or that he exists like a solitary animal, which is isolated in the world, without benevolence, without feeling, without the exercise of good offices; they feel and revere the bond which connects men together in society, which makes them dependent upon one another, which like a golden chain links every rank so closely together, that it is impossible their interests can be separated. I could mention celebrated characters, who feel the force of these divine principles, and as almoners of Heaven, the Divinity stirring within them, esteem it their duty to put them in practice: but delicacy forbids to name them. Nothing can be more true, than that all men connected in society are alike members of the same body politic of a country; as much so as the different members of the human body: their health, their soundness, their happiness at home, and their respect from abroad, their vigour for any enterprise, foreign or domestic, depends upon their union; their very existence must stand or fall together; if one class is undone, the others must suffer; if one is extinguished, the rest must perish.

In these eventful times in which we live, the gentlemen of Inverness-shire, no less than those of other
[INV.] 1 counties,

counties, have come forward with the offer of their lives and fortunes in defence of their King and Country. But the gentlemen well know, that without their peasantry, a hardy band, their arm would be feeble in the hour of danger. Yes; they know it, and will certainly cherish the reciprocal dependence betwixt proprietor and tenant, on which their own safety depends.

The same eagerness to improve, and, under the direction of a cultivated taste, to adorn property, which has pervaded the Southern counties of Scotland for at least half a century, has more than begun to be displayed in the shire of Inverness. The gentlemen residing on their estates, have for the most part entered fully into the spirit of cultivation, which must soon, under the auspices of the Board of Agriculture, become general over all the island. To them I owe much in the execution of the trust committed to me by the Board. Their attentions were very encouraging in surmounting difficulties; their knowledge of the country afforded the most correct information; their readiness to communicate this information kept pace with my inquiries; and the propriety of their modes of cultivation furnished the ground-work of any directions in farming, which this Report holds up for the imitation of others. These circumstances, which in a single instance did not fail, inspired with an alacrity, which was not expected at the commencement of this Survey. The difficulties which, when viewed at a distance, appeared of a magnitude sufficient to deter, diminished gradually on a nearer approach; and the facilities which were constantly afforded to enable me to accomplish the end of my mission,

sion,

sion, smoothed the path of my duty, gave to this Report any value that it has, if any there be, and is justly entitled to my warmest acknowledgments.

Upon the large estates, especially on those of which the owners do not reside in the county, the management is entrusted to factors, whose duty is similar to that of the land stewards in South Britain. In the detail of the business of such domains, where the proprietor's authority is delegated to another, various officers are employed. Next to the factor or chamberlain is the baron baillie, then the ground officers, the wood-foresters, and boor-law-men*. The particular powers of each of these confidential servants, the extent and nature of their jurisdiction, their importance in promoting the comfort of the tenantry, and securing the property of their employer, have all been pointed out with some degree of minuteness, in my Survey of Perthshire; but these offices being exactly similar in every county, and on every property, to save repetitions and a dull sameness, they are omitted in this Report.

The Sheriffs Depute and Substitute; the Justice of the Peace; and the Commissary, are also employed occasionally to interpose their authority in the business of estates; notwithstanding that they derive their authority, not from the Lord of the Manor, but from the Sovereign. The origin and nature of the powers vested in these magistrates are also described in the same publication, under the article corresponding to the one at present under discussion:

Within the boundaries of this county, there are

* So named, probably, from a word used in the Low Countries, which is similar in signification to our *peasant*, or *clown*.

some entire estates, and these of considerable magnitude. Lord Macdonald's is the greatest of that description, and has remained for ages without reduction or alienation. The property of Lovat, of Clanranald, of Macleod, of Mackintosh, of Cluny, of Chisholm, of Lochiel, of Glengarry, of Culloden, and others, belong entirely to Inverness-shire. The Duke of Gordon, the Earl of Moray, Lord Cawdor, and Sir James Grant, have extensive properties elsewhere, besides what they possess in this county.

The following tables give a clearer view of the state of property, and of the rank which the landed gentlemen hold in respect of fortune, than it is possible to convey in words. These tables refer to the valued rent, which was fixed at Inverness in 1601, by commissioners under authority of the Scottish parliament.

*State of Property, according to the Valued Rent,
arranged in Five Classes.*

FIRST CLASS.

Estates exceeding 3000*l.* Scots Valuation.

N.	£.	s.	d.	No.	£.	s.	d.
1.	7795	6	8	5.	5505	0	0
2.	6445	15	6	6.	3762	12	10
3.	6400	15	6	7.	3184	13	4
4.	6298	14	0				
					£. 38,792	17	10

SECOND CLASS.

Estates from 1000*l.* to 3000*l.* Scots Valuation.

No.	£.	s.	d.	No.	£.	s.	d.
1.	2423	10	0	4.	2072	17	10
2.	2202	10	0	5.	1733	6	8
3.	2100	0	0	6.	1232	16	4
				<u>£. 11,765 0 10</u>			

THIRD CLASS.

Estates from 400*l.* to 1000*l.* Scots Valuation.

No.	£.	s.	d.	No.	£.	s.	d.
1.	937	3	4	13.	510	6	10
2.	896	10	0	14.	492	4	10
3.	844	15	8	15.	470	0	0
4.	872	6	8	16.	469	0	0
5.	816	13	4	17.	463	13	4
6.	880	6	8	18.	446	3	4
7.	760	0	0	19.	434	19	8
8.	747	13	4	20.	425	0	0
9.	618	16	6	21.	420	10	0
10.	613	6	8	22.	416	13	4
11.	581	0	0	23.	409	0	0
12.	533	6	8				
				<u>£. 14,029 10 2</u>			

FOURTH CLASS.

Estates from 100*l.* to 400*l.* Scots Valuation.

No.	£.	s.	d.	No.	£.	s.	d.
1.	400	0	0	18.	179	9	8
2.	379	5	0	19.	170	0	0
3.	376	13	4	20.	163	0	0
4.	370	0	0	21.	157	13	4
5.	373	15	8	22.	153	4	5
6.	336	3	4	23.	150	0	0
7.	325	0	0	24.	150	0	0
8.	313	0	0	25.	145	10	9
9.	288	0	0	26.	142	0	10
10.	264	13	0	27.	133	6	8
11.	266	13	4	28.	141	17	0
12.	200	0	0	29.	108	19	10
13.	254	0	0	30.	107	19	11
14.	224	0	0	31.	107	13	0
15.	210	0	0	32.	100	0	0
16.	210	0	0	33.	100	0	0
17.	198	3	5				
					£. 7210	4	10

FIFTH CLASS.

Estates under 100*l.* Scots Valuation.

No.	£.	s.	d.	No.	£.	s.	d.
1.	98	13	4	8.	79	10	0
2.	98	0	0	9.	66	0	0
3.	96	12	6	10.	54	0	0
4.	96	10	10	11.	56	0	0
5.	85	18	9	12.	50	0	0
6.	86	8	0	13.	46	13	0
7.	80	0	0	14.	45	2	11
					£. 1040	9	4

About

About 12,000*l.* Scots of this property is under entail. Many Heads of Clans, and of the subordinate tribes of the same clan, have, from the earliest ages, continued to reside in this county. Lord Macdonald, who represents the ancient Earl of Ross; Macleod of Macleod; Fraser of Lovat; Sir James Grant of Grant; Mackintosh of Mackintosh; Cameron of Lochiel; Macniel of Barra; Macpherson of Cluny; Chisholm of Chisholm; Macdonell of Glengarry; Macdonald of Clanranald, and a few more, who are all Leaders of Clans, except Clanranald and Glengarry, who are chiefs of tribes of the same Clan.

SECT II.—TENURES.

THE tenures are of three kinds: baronial rights, which are reserved by ancient families over their vassals, under the name of superiorities: some estates hold of the crown, and acknowledge no other superior; the number of such freeholders is said to be only twenty-six. A third class holds of a subject, upon condition of paying a certain stipulated feuduty in money or victual, or some other articles: but these prestations are generally converted into money.

The small number of freeholders on the roll of the county, whose valuation must at least be 400*l.* Scots, is an evidence, either that many of the estates are under that valuation, or that they hold of a subject superior: neither of these is entitled to elect or be elected for a member of parliament.

Wadsetts, were at a former period frequent and numerous;

merous; but have now been mostly resumed, the price being paid up so soon as the term of redemption arrived. These were commonly granted to the younger sons and near relations of the great barons, for these reasons: 1. Being more attached to the head of the tribe, than any other description of men, they were appointed the officers of the Clan, when an expedition was undertaken: 2. The scarcity of money made it more convenient for the needy nobility or chieftains to borrow money in this way than in any other, or to give their children a patrimony, when about to settle in life: and 3. When every man's occupation was war, or farming and grazing, before the spirit of adventure in going abroad to acquire wealth was known, the youth remained at home, on wadsetts or leases of ground at a moderate rent. In this manner a Clan during the patriarchal no less than the feudal system, were in fact a battalion of armed men, living closely together, and united by the most powerful ties of consanguinity and interest. Accordingly we find the Highland tribes settled in clusters, in the same valley or strath, unmixed with any other people; nor was it at one period very safe for a stranger to attempt settling amongst them. A few, and but very few, of these redeemable rights now exist in any part of the Highlands; and if the wadsetter continues in the same possession, the right of wadsett is changed into an ordinary lease.

Near the burgh of Inverness, some of the lands are held of the town, by a burgage tenure, for which an annual quit-rent or feu-duty is paid, which forms a part of the revenue of the community.

CHAP. III.

BUILDINGS.

SECT. I.—HOUSES OF PROPRIETORS.

HAVING said so much, in the topographical description, relative to the principal houses which are at present inhabited by proprietors, all that seems necessary to be remarked on the subject in this place, is only to observe, that in almost every parish of the county, the vestiges of castles and strong-holds are to be seen, which belonged to the different chieftains, who possessed the property of the country. Castle Grant, in Strathspey, Dunveggan, Macleod's castle in Skye, and Chisholm's at the confluence of the Glis and Farrar, instead of being deserted, which is the fate of many others, are in high repair, enlarged and ornamented. But as these and the modern buildings, come under a traveller's eye in one prospect, along with the general appearance of other interesting objects in the aspect of the country, they have been all classed together under one article. They are so closely connected, that they form only different parts of one whole, which it was thought improper to disjoin.

SECT. II.—FARM-HOUSES, OFFICES, AND REPAIRS.

THE condition of the houses in which farmers and their cattle are lodged, uniformly indicate the state of
a country,

a country, in respect of improvement. Many are the symptoms, of which this is one, how far a proprietor and his tenants understand or neglect their own interest. Where a stranger observes mean, dirty, inconvenient houses upon any estate, he concludes, without further inquiry, that the possessors of these houses are poor, spiritless and indolent, and what is worst of all, perhaps oppressed. He concludes also, that the landlord, whatever be his splendor in the sumptuousness of his table, or the gaudiness of his equipage, has more vanity than judgment; a greater desire of dazzling the eyes of mankind, than of promoting the comfort of his tenants, or increasing the value of his own property. Where, on the other hand, the dwellings of the ordinary farmers are snug, comfortable and clean, this is a proof that the people both desire and deserve to be properly lodged, and that the landlord has such a degree of humanity, that he wishes to see his people happy, as well as himself. There is hardly an instance, in which this conclusion is not drawn, and there is hardly an instance, in which it is not just. The houses of the tenantry, in any country, afford to travellers one subject of conversation on their journey, and constitute a leading article of their news to their friends, after their arrival at home. Who would incline, in these circumstances, to be held up as an object of derision or reproach, at the distance of some hundred miles? Who would incline to be stigmatized at any distance, great or small?

The farm-houses built for gentlemen, or the wealthier sort of tenants, in this county, are well constructed and substantially built. Those of the poorer tenants are in most places mean beyond description. The huts of the Indians bordering on the Lakes of the St. Lawrence

rence cannot be worse, in point of structure and accommodation. Were it my intention to irritate, I could easily give some account of these nasty hovels, or at least point out the estates on which they are most numerous and in worst condition; but my desire is to reclaim, without provoking, and to soothe into reformation by the mild language of persuasion. Even the manuscript sent to me by the Board, which seems to have been written by a native of that county, does not spare them; but I spare them, not from any approbation of the trespass, but from a fond hope of a change, and that too a speedy change of conduct. A man who retains any regard for his character, will reform sooner, while there remains some doubt of his being identified, than after he has been treated as a real culprit, and exposed by name and surname to the contempt of mankind.

These mean houses are by far too numerous, on all the farms where they prevail. The inhabitants are too poor, for the most part, to build them properly, and therefore must increase the number, to provide accommodation corresponding to the circumstances of a stormy climate: and it would seem that the landlord cares nothing about the matter; his only object being to gratify the cravings of luxury, and to secure his rent.

It is not meant to be insinuated, in the most distant manner, that all the dwelling houses in this or any other country ought to be large or elegant, having courts of offices attached to them. This proposal would be equally absurd, as if it were recommended to render all the inhabitants equally rich, and equally industrious. But may not the cottages of the poor be made comfortable and commodious; more conducive to health

health and cleanliness, and more analogous to the progress of society in this country. While the higher ranks of the tenantry are better lodged than formerly, the lower ranks might be expected to advance a little in point of accommodation.

Towards the east coast, in some part of Strathspey, Badenoch, and Urquhart, on some estates in the Aird, on the rivers Lochy and Spian, and a few other places, a better style is adopted in the construction of several farm-houses, while others retain their ancient slovenly appearance. In rearing these houses, which are built with mud (provincially feal), and which are covered with thin turfs (provincially divots) much injury is done, by peeling the surface from the green ground, which in many places is very scanty : and the annual repairs necessary, where the number of houses is so great, and the materials so perishable, increase this injury in a high degree. When such a house is to be built, the first thing done is to construct a coarse frame of wood, corresponding to the dimensions of the house, in length and breadth ; then upon this frame to fix standards inclining inward, at proper distances, which rise to the height of the intended wall, and are kept in a firm position, by being morticed in a tree above, of the same dimensions with the tree below. These standards are closely wove with wicker-work, to keep the sods from falling in ; which being built on the outside, finish the side walls of a creel-house, as it is called.

There is a tendency in some districts to abandon this practice of building houses, by making the under half of the walls consist of stone, and the upper part only of mud. In other cases, that a copious circulation of air may be admitted into the barn, the walls

of

of the gables are built no higher than the eaves of the side walls; the triangular part above is secured with broom or brushwood wound upon upright rafters; reaching from every part of the gable to the roof.

Wherever good houses are built for the accommodation of the farmer's family, the offices are in the same style of excellence: and there is hardly a district of the county, where a certain number of these is not to be found; but in some more, in others less. The dwelling consists for the most part of two floors, is covered with blue or grey slate, and is properly divided into separate apartments; the timber-work in some cases painted, the walls plastered, and the windows glazed. The offices are set down in the form of a square, either behind or off at one side of the dwelling house, as most convenient for cattle and the operations of the farm. To enumerate some of these, would not be doing justice to the remainder; and to enumerate them all, however few, might be deemed tedious. The fact is, and it must give pain to a feeling heart, that there is too great an interval between the higher and the lower order of tenantry. The former are very comfortable in all their accommodations, very intelligent in their conversation, polite in their manners, and hospitable in their houses: the latter are deprived of these comforts, but have an understanding to discern, and an acuteness to feel their wretchedness, which fills them with anguish. This is the general complexion of the county; but this is not the place to describe it fully: the subject will occur afterwards.

The offices of proprietors, are for the most part in the best taste of neatness and convenience, and some are not only elegant, but superb. The court of offices built for one of the farms at Belladrum, was taken no-

tice

tice of in the description of the Aird. It would be unpardonable to pass over in silence those of Newton, where Major Fraser has united neatness and convenience in the construction and situation of his houses of this kind. The cow-house is divided not by the length but across, and the cattle feed head to head, with a clean path between every two rows of cows, in which the feeder goes to lay down their provender. A gentle declination carries off all the water spontaneously, and facilitates the conveyance of the dung. The other offices are equally convenient, which in all cases is more easily done. At Kinrara, offices of a very handsome construction were carried on during this Survey, in 1804. No doubt in other parts of the county, particularly in those which border on the German Ocean, there are various courts of offices, equally convenient with those mentioned in this section. The style of the gentlemen's houses confirms this opinion, although the multiplicity of matters which demanded my attention did not permit the opportunity of seeing them all.

According to the most correct information which could be procured, the repairs of farm-houses are executed differently in various districts. In some places it is the custom to give the tenant at his removal, a compensation for the timber that had been used in the fabric of his house and offices, according to its value, but nothing in payment of doors, windows, walls, or thatch. This mode of settling, evidently implies that the proprietor gives no assistance in the construction of houses, and that no materials or part of the steading on the whole farm is of any value; except the few rude timbers which support the roof; a proof to any person almost equal to ocular demonstration, that these

these wretched hovels are no better than they are generally supposed to be. In other cases, a certain rate or price is condescended upon, as the standard at which the timber of all the houses on a farm ought to be valued. If the removing farmer leaves more timber than amounts to this value, he is paid for the surplus, either by the landlord or the incoming tenant; but if less, he is charged in proportion to what is wanting. In this contract, the same supposition still predominates, that nothing in a steading is of any value, but the timber in the roof, since that alone is recognized in the contract. There are cases, in which a certain sum, as may be agreed on, is allowed to the farmer for buildings and improvements of every kind; but this sum is not payable before the expiration of his lease; at which period, though they should exceed the stipulated value, the farmer receives only the sum agreed upon; but if they are below it, he draws only the money at which they are then appreciated. This looks like the dawn of improvement, provided the landlords make a liberal allowance in the contract, and that tenants are possessed of spirit and means to avail themselves of that liberality.

SECT. III.—VILLAGES AND COTTAGES.

BEFORE I descend to the villages and cottages, it will be proper to give some account of the principal town and the objects worthy of notice in its immediate neighbourhood. Inverness was first situated on a hill (now known by the name of the Castle-hill), at the east end of the present bridge of seven arches, which

which was in the year 1688 built over that part of the river Ness. This town, like all others, being small and helpless in its origin, courted the protection of the castle, situated on the east end of the same hill, which belonged to the Thane of Cawdor. In this castle, according to Shakspeare, who is generally very correct as to his historical anecdotes, Macbeth is supposed to have murdered Duncan, his lawful sovereign. But after Malcolm Kenmore had succeeded in overthrowing the usurper and mounting his father's throne, he razed this castle to the ground, removed the town northward to the plain, where it now stands, and granted its first charter. A new fortress was built on the site of the old town, at the west end of the hill.

Oliver Cromwell, not thinking this castle of sufficient strength, after the invention of gunpowder, erected a citadel at the mouth of the river Ness, a considerable distance below the town at that time. This was a regular fortification, built according to the modern rules of that art, which commanded both the harbour and the narrow entrance from the Murray Firth into that of Beaully. Charles II. demolished this citadel, of which nothing remains but the vestiges of the ramparts and ditches, which form an equilateral pentagon, enclosing four acres of ground, the river making one of the sides.

After the insurrection in 1715, the castle built by Malcolm Kenmore was repaired, and barracks and a rampart added to it, which continued in that state until it was finally demolished during the rebellion in 1745.

By various charters under different reigns, and the last of those granted by James VI., the privileges of Inverness were confirmed, and the constitution of the
magis-

magistracy (or as it is called; the sett) thereof was fixed in 1648; and ordained to consist of twenty-one members, viz. a provost; four baillies, a dean of guild, a treasurer, besides eleven merchant counsellors, and three trades counsellors. The mode of their election and continuance in office, is also regulated by statute.

The appearance of the town is much improved within these thirty years. The streets are newly paved; a foot-path of hewn stones is made in most places on each side of the street. The churches; town-house; tolbooth, and taverns; have been all ornamented or rebuilt within that period; and the houses of the citizens are made more regular, elegant, and spacious. This being the most northerly station of the circuit, or ambulatory criminal court, all persons accused of felonious practices in this and the northern counties, are lodged in the jail of Inverness, which is a commodious elegant building.

It cannot however escape the observation of a stranger; that the part of the town which adjoins the Castle-hill is too much crowded, and more mean than that stretching down the river side; which seems to be more modern, and more resorted to; since the inhabitants could venture to trust for protection more to the law of the land, than to the castle.

A little below the termination of the principal street, which follows the course of the river, a harbour both safe and convenient is built. Several vessels from four hundred to five hundred tons, besides others of less burden, belong to the town. One was on the stocks in autumn 1804. The tide flows up to the bridge; and at the west end of the bridge a long range of houses in

the form of a row, is built fronting the river and the old town.

In addition to the ordinary schools, an academy was established at Inverness by this spirited people about twenty years ago, where six masters are employed in teaching the most useful branches of education. This is the only place, where the ancient but dying language of Britain is taught, with a regular salary to the teacher. The trade of Inverness, which is considerable, falls under another division of this publication.

In treating of these matters, it would be unpardonable to pass over in silence the family of Cuthbert, which was very ancient and respectable, had their title from the Castle-hill of Inverness, and possessed a considerable estate in the parish. The greatest part of their property has been sold; but the remainder is in the person of Lewis Cuthbert, Esq. who resides in Jamaica, acting as judge of the admiralty-court, and enjoying a considerable landed property in that island.

The famous Colbert, confidential minister of Louis XIV. was of this family, whose abilities as a statesman were not only an honour to his family, but to his country. When the nobility of France envied the elevation of Colbert, being eclipsed by his superior genius, they could object only to the supposed obscurity of his birth, as disqualifying him for the eminent station which he held under their monarch. Their scruples were all removed, by procuring authentic documents of his being descended from the Chief of the Cuthberts in Scotland. Envy had its due reward; and the sun shone upon Colbert, brighter than ever. His illustrious descendants, who ranked high in the church and armies of France, still claim kindred with

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the Cuthberts of Castle-hill. The ex-bishop of Rodez is brother of Lewis Cuthbert above-mentioned, and resides in Britain, since the late revolution in France forced him to leave that country.

The manufactures of Inverness, will be mentioned under their proper heads; but Loch Ness, being so much connected with the river and the town, comes naturally in here.

Loch Ness was agitated very violently on the first of November 1755, during the earthquake at Lisbon. It flowed towards the west end, and up the river Oich, more than two hundred yards, and the flowing and ebbing continued upwards of an hour. A boat that was moored below the hut built by General Wade, when he conducted the road on the south side of the lake, was during the agitation dashed on shore, and carried back into the lake, and its rudder broken in pieces. No motion, or any symptom of earthquake, was perceived on any adjacent land.

Loch Ness is said to have taken in one place, 135 fathoms of line to reach the bottom, but in other places only between 116 and 120. Various opinions have been entertained relative to the uncommon quality of Loch Ness in never freezing: ingenious conjectures have been formed about the influence of fountains, supposed to be in the bottom, or some chemical quality of the waters, or the unceasing agitation of waves on the surface of a lake twenty-two miles long, perfectly straight, and environed with lofty mountains on both sides. But many other lakes in Scotland, and no doubt in other countries, are never covered with ice, any more than Loch Ness. The fact is, that all shallow waters in such a climate as ours freeze occasionally, and that deep waters never freeze, and the shallow parts of a

lake freeze, but the deep parts never. Perhaps a depth of about eighty or one hundred fathoms, may preserve any water in this island from freezing. But be that as it may; for we have not sufficient data to ascertain the precise depth that is proof against ice being formed on the surface; it is well known that cold condenses, and that heat expands both air and water. This constitutes the difference betwixt fog and snow, betwixt dew and hailstone. The latter are specifically heavier than the former. Now when a degree of cold, equal to the freezing point, has seized upon the water at the surface, this cold water descends by its superior gravity, and the warmer water below, being specifically lighter, ascends. This process must go on incessantly, regularly and uniformly, until the whole body of water in the same place be brought to an equal degree of cold before ice can be formed; but as that degree of cold generally goes off in temperate climates, before the mass of water in lakes of great depth can be brought to this degree of uniform coldness, ice cannot be formed on the surface of these lakes.

The river Ness is said to smoke in frosty weather, and to be proof against ice, the same as the lake. This is a demonstration, that the water in Loch Ness never approaches to the degree of cold in which ice is produced. The cause is the same in both. The waters of the river flow in such a large body, that in the course of six miles, which is all the distance from the lake to the sea, they never lose their heat to such a degree, as to be liable to freeze: nay ice is said to dissolve, when immersed in the river.

As to the smoking: not only this lake and river, but most other rivers, that issue from deep lakes, and all fountains, which spring from such a depth of earth

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as to exclude the cold, are covered with a smoke, in the same manner, when surrounded with a region of air, colder than themselves; which smoke however ascends no higher than the surface of either, and follows a river no farther, than till this visible vapour shall have attained the same degree of cold with the circumambient air. Upon the same principle, a pot set over the fire with water in it, must begin to smoke so soon as the water becomes warmer than the air in the same place; it must therefore smoke sooner in the fields than in a warm kitchen, and sooner even in the fields during frosty weather, than at other times.

Mary-burgh, or Gordon's-burgh, as it is sometimes called, from respect to the noble family on whose property it is built, is the principal village in the county of Inverness. It contained 1200 inhabitants about fourteen years ago; and from the continual increase it is receiving every year by new settlers, owing to the enlargement of farms in the adjacent Highlands, it may be stated at 1800 or 2000 souls by this time, including the military.

The garrison contiguous to the village, was called Inverlochy, when fortified by Oliver Cromwell; and was at that time only a mud fort, but of such a size, that it could accommodate 9000 men. This original fort of Cromwell's had very likely fallen into decay; for it was rebuilt with stone and lime by King William after the revolution, but upon a smaller scale. In the year 1745 it withstood a siege of five weeks, when invested by the rebels. At present it contains only a company of invalids.

The garrison is all covered with blue slate, and all the houses, except very few, of the village. But the south-wind from Lochiel, on the banks of which both

garrison and village are situated, is so violent, that the walls are in many instances covered with slate down to the ground, which gives them a grotesque appearance. The houses are all built on feus from the Duke of Gordon, and many of them two floors high. As might be expected, a variety of tradesmen are employed in this place, for the accommodation of the troops in the fort, and the adjacent country. It is the residence of a sheriff substitute, and of a collector of the customs due at this port.

The village of Campbell-town, contiguous to Fort George, is the next in point of consequence in the shire of Inverness, the population of which about fourteen years ago, was 293 of all ages. By a moderate computation therefore, according to the increase of most villages, they may now be reckoned 350. The inhabitants hold their houses and lands during the pleasure of the proprietor, who is Lord Cawdor; therefore, as might be expected, the buildings are inferior to those of the former village, because they are not the property of the persons who possess them.

Fort George, which is adjacent to Campbell-town, and was the sole cause of a village being there, contains at all times three companies of invalids, besides a marching regiment which is generally stationed in that place. Of this neat fortification, some notice was taken in the geographical description of the county.

The village at Fort Augustus is less extensive than either of these, and is in the same predicament as to tenure with the last of them. The houses are all built on the Governor's domain, except those on the north side of the river Oich, which are situated on Lovat's property.

The ancient name of Fort Augustus was Kilchuiman,
which,

which, in the language of the country, signifies the *burial place of the Cummins*. There is little doubt that this Clan was possessed of very extensive territory and of great power in the north of Scotland, about the beginning of the fourteenth century; there having been no fewer than fourteen great Barons or Chiefs of that name in the field at one time, each with a considerable number of followers. The principal tower in the castle of Inverlochy is called Cummin's tower, where it is likely he lived. Another fortress of theirs was situated in Badenoch, on a green hill, where the ruins of the barracks of Ruthven are now mouldering to decay; and a high mountain on the east side of Loch Ness, is named Sui-chuimanich (the seat of the Cummin), where it appears the great Cummin or chieftain of the whole tribe, was wont to sit and take a view of his princely domains. Their treacherous conduct at the battle of Falkirk, and their opposition to the views of Robert Bruce, are well known; for which they suffered severely, and have been on the decline ever since.

The first garrison at Fort Augustus, which was built in 1730, and so named in honor of the father of George III., was situated more remote from Loch Ness than the present building; but having been demolished by the rebels in 1745, it is now in ruins. The present one is situated nearer the lake, on a beautiful eminence, which has a gentle declination to the river Tarf on the south, to Loch Ness on the east, and to the river Oich on the north. It is a handsome rectangular building, comprehending four sides of a square, which contains an open area in the centre about one fourth of an acre, and capable of accommodating four hundred men. A dry ditch is carried round the whole, mounted with cannon. Contiguous to the garrison at the end of the lake,

lake, a quay has been erected in water of twenty fathoms, where a galley is generally moored, which brings stores from Inverness to the garrison.

Kingussie, a village lately begun in Badenoch, promises to rise fast into consequence, owing to the encouragement given to settlers, and the richness of the adjacent country. The feus are granted by the Gordon family, at the rate of four pounds sterling of feu-duty the acre, for houses and gardens; but no premium is paid at the entry, nor any feu-duty demanded the first three years; which is a wise measure, because the feuars are thereby left in full possession of their money, to enable them to build good houses. The acres which are given to them for accommodation, are rented from sixteen to twenty-five shillings, according to the quality of the land; and one guinea is charged for the grass of each cow, and the wages of the cow-herd. I never saw the cattle of a village in such good order, nor so handsome. The villagers are bound to give six days labour, or in default thereof, one-shilling for every deficient day, for repairing their own peat road, or for clearing the channel of a rapid brook, which crosses the street from a hill behind. They are debarred from building any mud-houses. All these prestations and restrictions are plainly intended for their benefit.

Mr. Fraser of Lovat, is establishing a small village at Beauty, where the tenements consist of 76 feet in front, and 152 back. They are not feus, but given under a contract of thirty-eight years, for two pounds eight shillings of yearly rent. The ground seems to be valued too high, in a place too remote for manufactures; and the spur which the enjoyment of property gives to human industry is altogether wanting; nor does

does it appear that the settlers are to receive any aid in erecting the houses, which are in about half a life time to revert to the proprietor : the evident consequence of these privations is, that the houses will be mean, and the villagers poor and spiritless.

At a place called Aultorlish, on the property of Culloden, there is a village situated on the coast, which is inhabited by fishermen, who are employed in catching salmon and haddocks. The liberal idea of giving villagers a kind of property in their possession, which is so frequent in the south, and which is such a powerful encouragement, does not seem to have pervaded many parts of this county. Grant-town, Kingussie, and Mary-burgh alone have been set off in feus. The natural effect must follow. These will leave the other villages far behind, and daily outstrip them more and more in population, in ornament, in industry, in the urbanity of the people, and in every desirable object.

A very neat and substantial range of houses is carried on in Urquhart, under the direction of Sir James Grant, where that gentleman will have an opportunity of gratifying his humanity, by seeing the villagers well lodged, and in all respects comfortable; while at the same time an adjacent low moor is improved. At Castle Grant he has one of the prettiest villages in Scotland, but it does not fall within the limits of this Report.

The cottages of tradesmen are tolerable in most parts of the county, but those of cottars are meanness itself, being seldom proof against any shower that falls; the floor a mire, and the dwelling full of smoke. Captain Cook said, that the lowest degradation of the human

human species must be the inhabitants of Cape Horn. A man from the south of Scotland, can never have seen cottagers in the same condition of wretchedness with those under review.

In delineating the constitution proper for a village, if my opinion is to have any weight, the reader is referred to some remarks made above, and the Survey of the county of Perth, because the repetition of what is there said on this subject, would swell this volume beyond all reasonable bounds. One thing must however be carefully attended to, that the proprietor keep some checks in his own hand ; otherwise his village may become a nursery of sedition, or a den of thieves.

CHAP. IV.

MODE OF OCCUPATION.

THE manner in which the soil is occupied, is a proof of the state in which the agriculture of any country is placed. There are certain regulations requisite in the management of land, in order to reap the benefit it is destined to produce; but if these regulations are not adopted, the soil is not brought to its full value. The object of agriculture is to increase its produce; and the purpose of all institutions and directions respecting the treatment of ground, is to facilitate the means of accomplishing that end.

When we see a number of farmers linked together about the same ploughgate of land; when we see all their houses huddled together in the same group, all their ground in alternate ridges, and their possessions without enclosures; these are strong symptoms of the low state of agriculture in that country. This at one period must have been the condition of all the counties of Scotland. The people chose to live in these hamlets for mutual protection: and while the proprietor was eager to increase the number of his retainers in feudal times, farms were divided and sub-divided into very small holdings. The southern counties have emerged sometime ago from this pitiful condition of indolence and poverty. In the northern counties, and in the shire of Inverness among others, much remains to be done, before this feudal aspect of the country is changed,

changed. In many parts of Inverness-shire, the change from alternate ridges (provincially *runrig*) has been slowly and very lately introduced; in some places it has not yet been adopted; and in one district, the practice time immemorial has been, for every farmer to hold his share of in-field during a very limited period, generally three years, which then passed into the possession of another; but their land in this district is now divided into lots.

The denominations of out-field and in-field still prevail over one half of the arable ground of the county. The out-fields are manured by the dung of cattle confined in folds, over night, during the summer and autumn, and then cropped while the land can produce any grain. The in-fields get all the house-dung, and are cropped alternately with barley and oats, or frequently with two crops of oats after the barley.

According to this ancient system, all the contiguous tenants of the same landlord, used their hill-grass in common through the whole year.

The dawn of improvement has however in some districts begun to appear; and by the exertions of a few gentlemen who shine like constellations, the light of knowledge in rural affairs will soon be diffused all around them. Under a government, by which complete protection is equally held out to the poor and rich, by which the honest fruits of his industry are ensured to every man; and by the establishment of a Board of Agriculture to teach the most profitable mode of occupying the soil, the road to improvement and wealth must be sought out by many, who never trod in that road before; must be sought by all; and if sought in earnest, it will be found.

SECT. I.—SIZE OF FARMS, AND CHARACTER OF FARMERS.

MANY of the estates in the county under consideration, were never measured, so that the rule of letting land by the acre is by no means general. In this state of things, recourse was had to fix the rent of arable land by the quantity of grain which ought to be sown upon a defined portion, and the rent of pasture by the *soums** of cattle it would graze. Another mode of estimating the extent, and consequently the yearly value of arable ground, in one or more farms was, in early ages, and still continues to be in some cases, by the *daugh*†, the *aughten* part, the *boll*; in other

* A *soum* is understood to be the grass of a full-grown cow or ox. A horse is estimated at two *soums*; and in most Highland countries, four sheep, but in some cases five, are reckoned one *soum*; and all young cattle in proportion as they approach towards their full size.

† These *daughs* and *bolles* refer to an old standard of valuation of ground, not entirely forgotten. The divisions of land marked by pounds and marks, &c. are frequent in the lower parts of Scotland; but *daughs* and *bolles* are unknown any where south of Inverness-shire. Every *daugh* seems to have consisted of forty-eight *bolles*, which comprehended a greater or smaller district of country, according to the quality of the soil. The *aught* or *aughten* part (which appears to be a corruption of the *eighth* part) consisted of six *bolles*. This denomination was subdivided still lower, into pennies, &c. The era of the introduction of these divisions of land, both in the South by pounds, &c. and in the North by *daughs*, &c. is beyond record; and even tradition itself is silent on the subject. One thing, however, is certain, that these valuations existed, and furnished not only a rule for levying rents, which in the North must then have been paid in grain, but also fixed the general and known levy of soldiers, when men or horses were required for the service of government, in the event of a national war, and a rule to the chieftain for raising his followers, even in making predatory inroads upon his neighbours. This subject ought to be resumed, in treating of the mode most effectual in preserving the population.

cases by pounds (Scots), the mark-land, the penny, and halfpenny; of which I could not obtain an explanation altogether satisfactory; and therefore suppose these different terms expressed some old valuation, long ago exploded, at or before the time when a more recent valuation was established in the reign of Charles II.

With regard to this last valuation, it merits attention, that however accurate and just it might have been, as a rule for ascertaining the value of land when it was established in that reign; yet by the eventual change of the circumstances of the country, it has now become extremely capricious and unequal, as a just mode of ascertaining the comparative value of different kinds of soil; and consequently must be an unjust rule for laying on public burdens.

In that age moveable property was very insecure. No man could be certain that his cattle of any description were to be left with himself for a single day, nor that he should ever recover the spoil, unless he could overtake the thieves with a superior force.

While the country remained in this state of depredation; while the law was so feeble and ineffective that no property in cattle was secure, grass-lands must have been of so little value, as to be reckoned hardly worth any thing. Whereas, on the other hand, arable lands, whose fruits were more secure, were more valuable, because these could not be removed without being carried, and because they were of little use until the crop was ripe. The latter were therefore more valuable than the former, in proportion to the greater certainty of enjoying their fruits.

In these happy days fallen to our lot, when neither a sheep nor a cow is missing on the highest mountain, at most remote corner of the Highlands, grass-lands
have

have risen more than tenfold in value since 1748; but how much they had risen from the time of the last valuation being fixed by law to that year above-mentioned, I have no data to ascertain. Let it be supposed fourfold. The price of meal since that period, which is the criterion of the value of arable land, has hardly risen threefold, while the progress of cultivation may be accounted one, in addition to these, by having doubled the quantity of grain upon the land in tillage. Here we have fourteen in favour of the increase of value in grass-lands, and only four in that of corn-lands, since the valuation at present in use was established.

If these premises be just, the public burdens affecting landed property, as regulated by the present valuation, are heavier on arable than on grazing districts of the country, in the ratio of 14 to 4. I know estates myself, of which the valuation is one-fifth more on the arable land than on the property in grass; yet the present rental or value is sixfold in favour of the latter. In other cases, no doubt the disproportion is greater. Some parishes in the low country, of very moderate extent, have a higher valuation than some counties in the north; while at the same time, by reason of the present security of moveable property, there is no comparison betwixt their rent; which is to a very high degree, in the inverse ratio of their valuation.

It is not perhaps my business, to say when or how this inconsistency ought to be rectified: yet the unjustice is so glaring and so universal, that it must strike every man who looks about him. The land-tax, a variety of county rates, and almost all parochial assessments are levied from proprietors, according to their respective valuations, as established in the reign allud-

ed.

ed to above; therefore it is clear to a demonstration, that these monies are not laid on in the just proportion, nor near the just proportion, of the real value of the different properties. But to return from this digression.

When the ground is of little value, possessions in the hands of farmers, as may be easily supposed, are very extensive. The grazings are often reckoned by miles. One in the vicinity of Fort Augustus, is sixteen miles long, by four broad. Several other mountainous possessions, in my estimation may vie with this one, though their exact dimensions have not been accurately ascertained.

In the best cultivated provinces from the head of the Beany river, along the coast down to Fort George, the rent of farms in general, is from 10*l.* to 200*l.* In some places of Strath Lochy, Glenspian and Badenoch, where the arable and grazing systems are conjoined and the farms extensive, this disproportion in the size of farms is carried a greater length, the rents of the great tacksmen being higher in proportion, to that of the smaller tenants in their neighbourhood. While the former pay from 300*l.* to 500*l.*; the rent of the latter is from 5*l.* to 20*l.*

Ever since sheep stocks became general, possessions have been enlarged more or less, according to their local situation. Where there is a long valley embosomed by two ranges of mountains which form its boundary, and only a little patch of arable ground at the foot of the valley, where its waters flow into a river or lake, such a possession is left generally to one shepherd, who can afford to pay a great advance of rent; not only by reason of the kind of stock he keeps, but owing to the small number of persons he maintains. Formerly, four or six families, it is probable, lived

lived on each side of this glen, besides cottagers ; whereas the shepherd requires but two under-shepherds and himself to attend all his flocks. Here is the saving of the maintenance of 100 or 120 persons, which goes in money into the landlord's, or the shepherd's pocket. Independent of the rise of rent by diminishing the number of mouths, the nature of their stock of cattle rendered it utterly impracticable* for small tenants to pay an equal rent. They reared a greater number of horses than their labour required ; and there is no species of bestial more useless or more expensive, than an idle horse. In Glenmoriston alone, a district of no great extent, a gentleman of veracity told me, there had been 900 horses till very lately. In a fine meadow of a well cultivated part of the county, I reckoned sixteen small horses grazing upon one farm. It appeared that the labour of the farm might be carried on by two or three, or at the utmost by four of ordinary strength, which certainly could be fed with one half of the provender thus consumed, both in summer and winter. These circumstances are only mentioned incidentally, to show that unless the lower order of farmers are persuaded to change their mode of occupying the ground, they never can put the amount of rent into the proprietor's pocket, which he can obtain otherways.

The character of farmers in Inverness-shire is as different as the size of their possessions, or the amount of their rent. The diversity observable in this class of men is greater than in the southern counties: what it may be in counties farther north, is not come, with any degree of certainty, to my knowledge. Very likely it may be the same as here.

I. There are a few, and but a few, technical-bred
INV.] L farmers,

farmers, who have been regularly instructed in this business from their youth, and follow no other employment. These have imbibed, not only the spirit but the practice of cultivation in the line of their profession, which hath distinguished other parts of the kingdom, and now distinguishes them, in their own country.

2. A second class consists of gentlemen, who have no landed property, but have taken farms, partly for pleasure and partly from views of profit or convenience. Of these, some have been in the army or navy, or in some other respectable line of life abroad. Others having succeeded to a little money, or having acquired it in the way of business, wish to pass the remainder of their time in the enjoyment of the pleasures of rural life. These for the most part take extensive possessions, chiefly in the grazing districts.

3. The most numerous class by far are those, whose fathers and grandfathers for generations followed the plough; and like that cast among the Hindoos, never think of changing the profession of their progenitors, or of rising above the rank which their fathers held in society. These having never left their native country, nor having seen the practice of agriculture superior to their own, unless it were by accident, seldom or never attempt to improve their farm or to amend their circumstances; because they despair of being able to imitate the successful improvements of others, by the dread of expense, the nature of the climate, or the oppression of the landlord. They inherit and blindly pursue all the customs, prejudices and errors of former times; and from generation to generation go round in the same circle, without deviating from the beaten track; and have no other end in view,
but

but to earn a morsel of bread for themselves and families. It has often occurred in the course of this Report, to mention *small tenants*, who uniformly belong to this class.

It must at the same time be acknowledged, that these are frugal, in their own way, and temperate; and that they labour hard in spring and harvest; but in summer and winter they greatly relax in their industry. Rather than relinquish their slovenly habits, by which alone they could expect to increase their own comfort or meet a demand for an increase of rent, they adopt the desperate resolution of removing to America. Seduced by plausible tales from that country (because such only as are favourable are circulated), dreaming of the prospect of acquiring wealth without industry, and goaded on by the insidious importunities of those, who have an interest to serve by their emigration, they, poor deluded men, in an ill-fated hour, take a step, of which not one in a hundred amongst them knows the full consequences.

4. Besides these classes, there are others who possess an arable farm in one district, and a grazing in another. Such men are of an active and enterprising disposition. They display their industry in the cultivation of the one where their family resides; and in the management of the other, their knowledge of the breeds of cattle, and their dexterity in buying and selling, is put to the proof.

The political principles of all these classes have hitherto in general been unexceptionable. Great industry has been employed in this and other counties for a few years, to seduce the unwary from their own and their fathers' former creed in Church and State; of which I decline to take any notice, except by insert-

ing verbatim in a note*, an extract from a letter written to me, since my return from the North; by a gentleman in the county of Inverness, who appears to dive into the plot, and to understand the ultimate tendency of these principles.

By their former disposition and habits, the second class of farmers are much attached to the Government; and the other ranks have a just sense of the propriety of subordination, of the difference of orders in society, and of subjection to the constituted authorities. Many of them, are the children of those who had been engaged in the rebellion of 1745: but deviation from duty in that instance, they are sensible, proceeded partly from ignorance, partly from compulsion, and partly from attachment to their Chieftains. Bred up with strong prepossessions in favour of clanship, they stepped forward without thought or hesitation, to follow the head of their tribe, some in support of Government, and others on the opposite side of the question. The present generation not being aware that the connexion betwixt them and their Chieftains has been dissolved by law in 1748, and expecting with more fondness than judgment, the same attentions as in the halcyon days of Chieftainship, feel hurt at the change of times. But they ought to reflect how much their

* "It was my opinion, from the first, that these vagrant preachers, who call themselves missionaries, and who have spread themselves far and wide, and who seem to be heated with a fiery zeal to make proselytes, have the same object in view with that of Oliver Cromwell and his partisans, when they had outwitted Fairfax: and they only seem to require two things to be equally successful; 1. that their leader should have the daring intrepidity, together with the depth of Cromwell; and, 2. that Government should be hoodwinked, in suffering them to get arms into their hands."

political situation is changed for the better. Formerly they were in thralldom: now they are free men, and enjoy the privileges of British subjects. By the abolition of heritable jurisdictions, they are brought more immediately under the protection of the State; and have shewn themselves, on all occasions, good citizens, in obeying the laws; loyal subjects, in respecting their sovereign; and brave soldiers, in defending their country.

The moral character of the inhabitants of this county is far superior to what it was some time ago. The enormous crimes of bloodshed, of rapine, and plunder, carried on during the feuds of former ages, and not entirely abolished even a century ago, in open defiance of law and government, are now never heard of. The domestic and social virtues are more revered and cultivated by all ranks. The comforts of life and the friendly intercourse of society are enjoyed by the higher orders, as much as in any country; and even the condition of the lower ranks in these respects, was never so happy as at present, were it not for the frenzy which has seized the common people to emigrate, and the causes, real or imaginary, which have alienated their affection from their native country. The law is every where predominant, and the administration of it upright and impartial. Single individuals travel unarmed, in all directions, through the Highlands, with thousands of pounds in their pockets, to purchase cattle, without dread or annoyance.

Nevertheless the same duplicity in business, and tendency to chicanery in the ordinary transactions of buying and selling, which is prevalent in all countries, among persons who prefer interest to character; and a proneness to disguise or conceal truth, to persons

unknown, is by no means unfrequent. This closeness lays aside its deformity on certain occasions, and when engaged in the service of humanity, is at least nearly allied to virtue, unless it may assume that name. It was in this county that a bribe of thirty thousand pounds could not induce a single individual, about sixty years ago, to discover a circumstance which was well known to many of the people, both high and low. The same impenetrable secrecy, when necessary, still forms a strong feature of their character; and yet they are abundantly communicative, when reserve is not thought to be requisite, and very intelligent when they choose to open.

SECT. II.—RENT.

OVER all the Highlands of Scotland, the rise of rent has been general and progressive. Some estates had been locked up by long leases: other estates were in the hands of proprietors who augmented their rents, not rapidly, but as the circumstances of the tenantry, and the value of produce, rendered that measure expedient. These are, however, of the fewest number, and their names are well known: they are adored by their people, and universally respected. In general, the rent of lands was fixed by a secret or private kind of auction, in which nothing was considered, except the amount of the offer, and the security which the tenant brought forward to ensure punctual payment. In the last generation, it would have been thought singular to hear of any transactions of this nature. A landlord seldom preferred a stranger to his old tenant, unless

unless the latter was guilty of some trespass; and the tenant considered himself as having a tacit patrimonial interest in his farm, which he expected would descend to his posterity, while they behaved in a proper manner. But now this charm is dissolved: the patrimonial* notions are mostly exploded, and the whole transaction betwixt landlord and tenant is purely matter of paction, into which not a particle of affection enters on the part of the former, nor of gratitude on the part of the latter. He no longer considers himself as the father and protector of his people; nor do they feel or cherish the dutiful regards of children: all these sweet endearments are dissipated, and exist no longer. To a by-stander, this state of things must give pain; but when the cause is investigated, it can

* A Note, by a Gentleman who revised this Report before it went to the press.

"The abolition of the heritable jurisdictions was deemed a wise measure of state at the time, because it took off the dependence of the people on their Chieftains. If correctives of abuses could not be otherwise applied, under an enlarged and liberal policy, then, indeed, this was truly wise; but there are many of opinion, that the principles which dictated the total overthrow of the *patriarchal* influence, have been carried too far; and that if this had been duly cherished, under proper regulations, and more conciliation mingled with acts of power, there would not at this day be any such miserable expedient resorted to, as arming a mob, without a single leader amongst them! But when a Chieftain must himself enter into the army as an Ensign, and cannot secure even that inferior military office for a head of his family, where is the encouragement to maintain at his own expense an excess of population, from which he not only can derive neither honour nor advantage, but must sacrifice his rental; whilst his Southern neighbour, with a smaller extent of property, and fewer inhabitants, is enjoying an opulence suitable to the increased expense of the times?—However beneficial it may be to army agents, that promotion should be purchased only by money, it is obvious, that the State would gain by its being purchased with men."—*Sir John M. Murray, Bart. of Laurick.*

hardly be known who is to blame. The landlord, no doubt, at the expiration of every lease, has unquestionably an exclusive property in his own lands, and may dispose of that property to whomsoever, and on what terms soever, he thinks most conducive to his own interest. In the multitude of persons over all the country, who are eager to take farms, one after another comes forward to outstrip the one before him, by offers of a higher rent. In this situation, the owner of the soil is strongly tempted to enlarge his rent-roll; and who, in moderate circumstances, can resist the opportunity of becoming more wealthy in an honest way? Were it as disgraceful at present to offer for a neighbour's possession, as it was only half a century ago, there would be fewer competitors for every open farm; and were the proprietors to have the same need of men to protect their property at home, or to follow them to the field, as in feudal times, these competitors would not be courted.

The eagerness of those who are in quest of farms, and the avidity of those who let them, are not the only causes of the late enormous rise of rents: the decrease in the value of money is both a radical and progressive cause, which affects the price of every thing. The value of money on the one hand, and both the price and rent of land on the other, are constantly in an inverse ratio; while at the same time, the rise of the value of lands, and the increase of rents, are in a certain degree more nominal than real.

To these causes may be added, the superior improvement of the soil in producing more grain, and the superior management of cattle, together with the saving of expense by the enlargement of farms. It is self-evident, that the enlarging of farms, in all cases, dimi-

diminishes the number of tenants. Those who lose their possessions in one place, must make an effort to get farms in another, or go to towns, or leave the island. The business of letting and taking lands, may be considered as a kind of commerce betwixt buyers and sellers. The more that the buyers increase in number, while the sellers continue the same, the result must be, that the price of the commodity will rise; and if the enlarged farms be very great, either in respect of bounds or number, the consequence is, that the number of persons applying for farms is greatly increased; which must, again, have the same effect on rents, by raising them greatly beyond expectation.

Enclosing arable ground enables a tenant to change his system, and, by turning his farm into grass, to lessen the expense of management; which saving in management enables him to give so much more rent, as the expense of an arable system exceeds that of parks in grass.

The facility of getting possession of money, by means of having credit with one or other of the banks, fills the pockets of the farmer, or dealer in cattle, with ideal wealth. Inspired with confidence in proportion to the amount of this credit, he comes boldly forward, and offers for ground beyond all former example. Every bank, no doubt, strives to push its own paper into the circulation; and in this competition of the various banks to accommodate the public, their customers meet with few difficulties in accomplishing the end they have in view; because it is the interest of the banks to part with their paper, as much as it is the interest of those who apply to obtain it. How far this deluge of paper-money, with which the nation is inundated,

undated, shall ultimately contribute to its prosperity, is a question which falls not properly under my cognizance. The nature of the security which ought to be given to the public by banking companies, and the proportion which should always be preserved between their funds and their circulation, are matters of the greatest importance.

Near the county-town, where ground is measured, and for the most part enclosed, the land which was lett twenty years ago at one pound sterling the acre, will at present yield a rent of four pounds. The pasture of a full-grown sheep, in the grazing districts, which formerly used to be valued at one shilling, is now estimated at three or four. In letting such lands, both landlord and tenant endeavour separately to form an estimate, how many sheep a grazing can maintain. The value of the wool, and the number and kinds to be sold off annually, are carefully stated on the side of credit; the chance of loss by reason of the situation of the ground, or the unhealthy quality of the grass, the expense of shepherds, fox-hunters, smearing, shearing, straying, marketing, and the interest of money vested in the stock, are all thrown on the debit side, together with the rent. What balance remains on the credit side of the account, is the profit which the store-master is supposed to draw as a compensation for his trouble. The same rule has been long followed, according to the peculiar circumstances of the case, with regard to farms adapted to the grazing of black cattle, whether they be kept for the produce of the dairy, or fattened for the butcher.

Some years ago, a variety of different articles were included in the stipulations betwixt a landlord and his tenants, under the denomination of rent; such as
money,

money, barley, meal, carriages, kane (fowls), services, butter, cheese, stipend, land-tax, &c. consisting of a Gothic medley, which created much perplexity to all parties. So sensible were many landed gentlemen of this inconvenience, that the terms of their new leases are simplified, by comprehending all these casualties under a rent in money, which alone the tacksman is bound to pay.

On farms contiguous to the mansion of the proprietor, personal services were always an article, and a most vexatious condition in the prestations demanded from the tenantry. No farmer, in these circumstances, could ever be said to have his time, his labour, his horses, his servants, at his own command. By the conversion which is generally made of these services into money, this embarrassment is removed; nor does it appear what good a farmer can do for himself where they remain.

In situations where grain is the principal produce of the ground, the method practised by the Earl of Moray in the Lordship of Petty, seems to be calculated to promote the interest of both parties. The rent is divided into three parts; one-third payable in money, one in oatmeal, and another in barley. When the markets are dull, and prices low, the farmer has the advantage of paying his rent easily; when, on the other hand, grain sells well, his Lordship's rent rises in proportion to the times. This practice has, however, fallen more into disuse than perhaps it ought, in a national view. Were the proprietors of large estates to receive a certain proportion of their rents in grain, they would not only afford an ease to their tenants in cheap years, and reap a benefit in dear years, but they would have it in their power to regulate the prices

prices of grain, and keep the markets steady; and thus alternately to give relief to the country at large, or to the farmers, as the pressure of the times required; and upon every occasion, to check the nefarious speculations of forestallers in grain, when the regulations provided by law should prove ineffectual. Yet, notwithstanding these advantages, it is perhaps doubtful, how far the price of grain ought to be left under the direction of any one class of the community.

Grassums (or fines, as they are sometimes called), though at one time very frequent, are now almost entirely exploded. Such a custom might afford a temporary ease to a necessitous landlord, but it crippled the tenant, by his being compelled to part with a considerable proportion of his property at his very entry into the possession of a farm, in place of having all his wealth entire, to enable him to stock and improve his ground, and to pay the landlord's rent.

Every person acquainted with the Highlands, knows that the entry to farms is for the most part at Whitsunday; and that, if the possession be a grazing, or even a mixture of grass and arable land, the first rent is made due against the first Martinmas thereafter, and so on during the currency of the lease. The hardship of rents payable in this manner, is not so great as might be thought; because the produce of the grass is supposed equal to meet the landlord's demand. These rents are called fore-hand duty, being always paid before the grain to which they refer is reaped, or even sown. On farms purely arable, or mostly so, the rent is payable at the first Martinmas after a crop has been reaped; and if victual be any part of the rent, it is payable between Christmas and Candlemas thereafter.

It

It is equally ungracious and unavailing to enter into a detail of those estates, on which the rents are stretched to the utmost possible pitch. Wherever the landlord has chosen to do so, the opportunities he possessed, the motives by which he was actuated, and the consequences of his conduct, have been formerly explained. A few proprietors, however, have generously resisted these seducing allurements, preferring the pleasure of seeing a man upon their estates to their having a few more guineas in their pockets, and wishing to have the human species reared upon their lands rather than brutes.

SECT. III.—POOR-RATES.

NEITHER tithes nor poor-rates exist in Scotland, on the same footing as in South Britain. The funds for the maintenance of the poor are, the charitable collection of the parishioners every Sabbath at church, the interest of sums bequeathed for their use by pious and wealthy persons deceased, occasional donations by benevolent persons alive, some petty fines for breaches of decorum, certain dues for the proclamation of banns, and the use of the mort-cloth (pall) at funerals. This fund is managed by the Minister and Elders (churchwardens), under the controul of the heritors of each parish, who have at all times access to examine the parochial accounts.

When the provision arising from these funds is inadequate to the support of the poor, the heritors are convened by the Minister: the number of poor is laid before them, together with the amount of the stock

stock applicable to their subsistence: the heritors ordain an assessment to be laid on the parish in aid of the ordinary fund, equal to what the emergency may render necessary; one half to be paid by themselves, and the other by the collective body of parishioners, in terms of law. This assessment is apportioned on the different estates within the parish, according to their respective valuations. If the heritors refuse or neglect, after a legal citation, to meet for this purpose, it is competent for the Minister and Elders to obtain a decret before the Judge Ordinary of the bounds against heritors and tenants, for a sum adequate to the maintenance of the poor, including the aid that may arise from the ordinary funds. But in justice to the heritors in this county, and other parts of the kingdom, I had not heard of one instance, in which it was necessary for the guardians of the poor to sue them before the Sheriff in an action of this kind.

If the delicacy of the guardians of the poor in any parish prevents the assessment from being applied for, there is no other alternative, in cases of extreme necessity, but begging from door to door. In most parishes this practice is tolerated, unless the situation of the poor be so distressing, that even begging will not supply their wants, which very seldom happens: there is no other remedy in such an emergency, but having recourse to the legal provision.

It ought also to be taken notice of, that the poor in most parts of the Highlands have an honest pride, which disdains to descend in the scale of society; or a laudable shame, which blushes at every thing unbecoming a former reputation. Hence, an extreme reluctance to go about begging; insomuch, that persons who, from affluence or even from easy circumstances,

stances, have fallen into want, suffer often the most excruciating distress, to the very danger of perishing, rather than assume the garb of mendicants. These are generally relieved in a private manner, by humane persons, in their immediate neighbourhood. A gentleman told me, that there was not a mendicant in the parish of Kirkhill. But when the restraints of shame or pride have been laid aside, and the trade of begging learned, no change of circumstances will induce a beggar to relinquish the profession.

There is a species of begging frequent in the sheep countries, which is not thought disgraceful; gathering wool by indigent women at the season of sheep-shearing, to be spun by themselves for their own clothes. There is another relief afforded, by having a few potatoes planted on the farm where the paupers reside; for which boon, they give assistance in planting, weeding, and digging the farmer's potatoes.

This county is not so much infested with sturdy beggars and gypsies from the great towns, as those countries which lie farther south. To cross the Grampians is too great an undertaking, and requires too much travelling without occasional alms; and there being no town of considerable population within this shire, or near it, except the county-town itself, where the police is excellent, and every person seems to be employed, there cannot be such shoals of vagrants in the open country as one meets with on all the southern face of the Grampians. In my whole tour through Inverness-shire, no more than ten beggars solicited charity from me on the public road.

SECT. IV.—LEASES.

SOME leases in this county are of an uncommon long duration: but for the most part their term is short; and in many cases no lease at all is granted.

On the two farms of Fingask and Grome, the property of Mr. Fraser of Lovat, in the parish of Kirkhill, the possessors hold by a tenure to which there is probably no parallel. It cannot properly be called a *feu-right*, because it has a specific issue, is liable to services, and wants the usual solemnities of a regular charter. It has more of the aspect of a lease, though the period of the expiration be extremely distant. In both cases, the proprietor, one of the Lords of Lovat, granted to the tacksmen, their heirs and assignees, nineteen years, and at the end of that period, three nineteen years more; and after these are elapsed, a year for every day in the last three nineteen years; making in all, if my calculation be right, above 20,000 years. The uncommon tenor of this holding, induced the late Commissioners appointed by Government for the management of the forfeited estates in Scotland, to consider this grant as illegal. Accordingly they brought an action before the Court of Session, for its reduction; in which they succeeded: but the tacksman of Fingask appealed to the House of Peers, who reversed the judgment of the Court of Session, and declared the lease to be legal and valid.

In former times, when Chieftainship was of greater consequence than it is at present, lucrative leases of long duration were given by the Chiefs and great proprietors to the relations and partisans of their families, which were renewed from one generation to another,

another, in favour of the descendants of the original lessee: insomuch that these lands were accounted by both parties as a kind of property.

The duration of leases in the county of Inverness is so different in the various districts and estates, that some are only of seven years endurance, while others are prolonged to thirty, and others terminated by all the intermediate years between these extremes. Nineteen years is more general than any other term in the duration of leases, and that mostly on grazing possessions. Due attention to the improvement of the country, and to the expenditure of the tenantry in the cultivation of ground, ought to dictate the expediency of giving longer leases on farms which are purely or mostly arable, than on grass grounds. A few leases of the duration of 41 years, granted by the late Commissioners of Annexed Estates, are not yet expired. Some leases are for lives, with the addition of a specified number of years at the end.

The greater part by far of the small tenants have no leases. It would appear, that the landlords of these estates imagine their people will be more submissive in such abject dependence, than if their possessions were warranted by a valid agreement for a term of years. Perhaps they are more submissive. Perhaps they have the submission of slaves; and no doubt of slaves, whose hatred of their masters is always in proportion to their thralldom, and who want only the power or the opportunity of being revenged. Is this the Chieftainship, which has been so much celebrated? Alas! what greater influence ought a liberal-minded landlord to desire over his tenantry, than what arises from the reciprocal exercise of good offices; such as condescension, humanity, beneficence, and a desire to

see them and their families happy and prosperous, on his part; and on theirs, punctuality in paying their rent, gratitude and esteem flowing from affection, alacrity and zeal in the interest of his family, at all times and in all respects? This is the Chieftainship which a feeling heart could revere.

In those happy days which are past, never to return to the Clans, no greedy stranger of an unknown tongue was encouraged to overbid them in their Chieftain's land, or to receive the farms of half a score of tenants as one possession. On every estate this complete change has not taken place; the ancient connexion between the heads of tribes and their Clan is not in every instance dissolved. In these cases, the affability and kindness of the landlord is the frequent subject of their conversation, and the prosperity of his family is the object of their warmest wishes and most devout prayers. At their little parties and convivial meetings, his health is always the first toast. They feel an interest in the fortunes and destiny of his children. Upon his return home after a long absence, on his promotion to a place of honor or profit, or the birth of an heir, the glad tidings spread with the velocity of lightning, and bonfires illumine the whole estate. In the county of Inverness there are such landlords: as the almoners of Heaven, they taste the divine pleasure of making their dependents happy, which gives them purer joy than though their names were here taken down. There are also in the county such landlords as those lately alluded to, who are left to the execration of their people, to the contempt of every benevolent man, and to the reproaches of their own condemning conscience.

The granting of leases, and the rejection of tempting offers are not all, though a great part of what ought to

to be done to meliorate the condition of the lower ranks of farmers. They must be taught to reap the full benefit of their farms, and thus enabled to pay an addition of rent to the proprietor. One will ask, how is this to be brought to pass? My answer is at hand. Let every gentleman of large property condescend to do a thing which is extremely easy: let him select a number of young men, the sons of these lower tenants, aged about twenty years, who have an active, enterprising disposition, a quick and sound understanding, and if they can write a little, so much the better. Let these be sent to engage as servants to some farmers in the three Lothians, or in any other well cultivated country, with a promise of being promoted to the lease of a farm in their own country at the expiration of three or four years, upon producing a certificate of having served with fidelity and of understanding all the detail of ordinary farming, particularly the culture of green crops, sown grasses, and reclaiming waste land. One of these young men, being set down in every four or five miles of an estate, would rouse the spirit of their neighbours, and excite an emulation among themselves, which, in very few years would change the face of the country, and make it produce one third more, if not double the quantity of grain raised by the present system. It is far from my intention to insinuate, that the lower tenantry have not, in every district of the shire, examples of good husbandry every day before their eyes. But these examples are on the Laird's farm or some of the overgrown tacks-men, whom the poorer sort of farmers never think of imitating, because of the difference in their wealth, and because the latter hold their possessions during pleasure, or by a very short tenure: a species of tenure, if

it can at all deserve that name, which will not make people industrious so long as the sun shall continue to enlighten the earth; but until the inhabitants of a country are industrious, it is in vain to expect that it shall be improved. This subject must be resumed under another article. It cannot come too often under review.

SECT. IV.—EXPENSE AND PROFIT.

NOTWITHSTANDING the readiness with which information was communicated, on general subjects, which did not immediately affect the interest of the individual who gave that information, yet in some instances, there appeared a degree of reluctance to develop the whole sources and articles of profit arising from any mode of occupying land: nor do I suppose from any thing I could discover, that many even of the best farmers had been at due pains to take down an accurate account of their expense and profit. In the former case, delicacy or common civility forbade to ask questions which appeared to be unwelcome; and in the latter case, the want of accuracy rendered this species of information less valuable. Nor is the loss great; because it generally happens, where these calculations are made, that they receive a colouring from the disposition of the persons who make them. If they be vain and conceited, their calculations receive insensibly a tinge of exaggeration: if they be morose, every thing is loss. If the profit depends upon any secret in the cultivation of a particular species of grain or sown grass; on the management of the dairy, or the rearing of particular breeds of cattle or sheep, the probability is against the
full

full and fair elucidation of such a profitable secret, in order to discourage competitors. While we see this jealousy universally prevail in all other trades, where the exercise of ingenuity is employed to gain a preference in the market, there is no reason to expect that farmers or graziers form a solitary exception. This general principle operates with double force, when there appears a chance of the secret being published to the world, and when an opportunity offers to avoid the disclosure to a person, who has not been duly initiated in the profession. It is fortunate however, that the detail of a farmer's operations is in open day-light and in the fields, which makes concealment for any length of time impossible, either in his mode of agriculture or in his breeds of bestial.

It is well known, that old ewes bought in the latter end of autumn, wintered in low warm situations, and sold off next season with their lambs, yield more profit than any other sheep stock. In this stormy county there are few places calculated for wintering such a stock, except some favoured spots on the sea coast. A breeding stock, of which the ewes are kept four or five years on the ground, is the next in point of profit. These being in the vigour of life, require less shelter than the former, and can withstand the rigour of almost any season without danger, if they be allowed to descend, as their instinct directs them, on the eve of a storm, to the bottom of the vallies, and have plenty of strong foggage,

A wedder stock is the least profitable of all, but the most hardy to bear the piercing cold of high mountains. Were it not for this bold animal, whose shaggy, close fur enables him to face the storm without shrinking, when the cow and the horse lurk in

the lee of houses, the higher regions of our mountains could not be depastured more than a few months of the year, and some of them at no season.

In my own opinion, and that of some intelligent store-masters, who had the goodness to deliver their opinion fairly, the comparative profit of these three stocks is in the following ratio. Taking the profit of what are called slack ewes kept only for one season at twelve; the profit of ewes and lambs in a breeding stock will make ten, and a wedder stock eight.

On the domestic farm of Newton, in the Aird, Major Fraser has a small flock of the Bakewell breed. On a farm on the estate of Culloden, Mr. Young, bookseller at Inverness, has a dozen Spanish sheep, which he bought from a vessel that was carrying them to Canada on the account of Lord Selkirk, and had been wrecked on the coast of Scotland. At Easter Moniac, the mansion of Mr. Fraser of Relic, I saw a singular black Spanish ram of a large size, which had a white tail, a white ruff round his neck, and four large black horns. This was the only place in the county, where I met with fallow deer.

CHAP. V.

IMPLEMENTS.

THE implements of husbandry which are used by the inhabitants of any country, no less than the construction of their houses and the appearance of their ground, are characteristic of the progress which they have made in the knowledge of agriculture, and in their enjoyment of the comforts of life. These improvements are either simultaneous, or so nearly allied in respect of the principle to which they owe their origin, and the time in which they appear in any country, that they are universally found to exist together. Wherever we see the farmers turning up the surface of the earth in a slovenly manner, and employing uncouth and unhandy tools for providing their own food, which is the first care of every living creature, we instantly conclude that they are far behind in the line of cultivation. But wherever any of these improvements have made considerable progress, the rest are not far behind.

The general aspect of the county under review, is very much diversified; the genius and industry of the people, and the instruments of their husbandry, are no less so. In some provinces, all the modern improvements invented to facilitate the labours of agriculture, and to beautify the appearance of their lands, are to be seen in the highest perfection; while in other places,

no change has taken place in these respects for many generations.

In the islands and western parts of the county, the *cas-chrom*, or spade with the crooked handle, still retains its place in the operations of the rude agriculture there practised. This is a clumsy, heavy instrument, something in the form of a spade, and of great antiquity. The iron is triangular, resembling that used for casting turfs, having a strong and large socket for receiving a wooden handle, which is not straight, but shaped like two segments of a large circle, joined together and placed in opposite directions, like the figure in architecture, called an *ogee*.

At a little distance above the socket, the wooden handle has a peg or pin, fixed firmly, so as to answer the right foot, which is employed to aid the hands and to give more power to the instrument, in being driven forward below the surface. From the construction of the *cas-chrom*, it is evident that it does not go so straight down into the ground as the garden spade: it penetrates more in a direction sloping forward, and requires two or three efforts before the soil is turned over; but when turned, there is more ground generally taken up than any other spade, now in use, could accomplish. The reason of its doing more execution is obvious, not only because of the breadth of the iron, but also because the lower part of the handle slopes nearly in a horizontal direction, to receive some of the tough sod to be turned over. The triangular point of the iron qualifies this instrument to enter easily among stones; and the coarseness of the surface, and thinness of the soil, enable it to lay over a greater quantity of sod than any other instrument for digging, which is wrought by the foot. It was in
great

great estimation with the common people, who were wont to employ it even in fields, where the plough might act; but at present it is seldom used, except on ground with a rocky bottom, or on the shelves of rocks, where no plough can be used.

In the islands, the people are said still to use ploughs with one handle; for what reason, it is not easy to conjecture, because two handles give, in all cases, more command in the direction of a plough, than one. I was informed that in lea or grass ground, where the cas-chrom is to be used in digging the soil, they first of all fix an instrument like a coulter, in a frame of wood resembling a plough-beam, in which a horse is yoked, to cut the tough and matted surface into parallel lines, leaving the intermediate spaces of that breadth which the cas-chrom can easily turn up. This kind of plough, if it can be called one, seems to be only subsidiary to the other instrument.

Harrows with wooden teeth, cart-wheels unshod with iron, and without bushes of cast metal to facilitate the motion, tumblers, currans or currachs, to carry home corn and hay, baskets for carrying out their dung, another kind of basket for carrying home peats, sledges or sledges for particular carriages; and many other instruments of the same rude construction, continue to be used in many districts of this widely extended county. The principal recommendation of these uncouth instruments is, that some of them are well adapted to the state of the roads, or places in that country where there is no road at all; that others of them are cheap to poor people; and that the farmer himself can make and repair them at his own convenience. At a distance from carpenters and smiths, every man must be frequently at a loss, who has not learned

learned to be handy in these matters. To attempt in this place to describe such rude implements is unnecessary, as there is a hazard that the description might not be understood by those who had never seen them, and that in a few years it would be useless, as it is to be hoped, the objects described will exist no longer. Persons of curiosity are referred to the Survey of Perthshire, where some notice is taken of their construction and suitableness to the situation of certain countries, and to the condition and manners of the inhabitants.

About 35 or 40 years ago, scarcely could a plough or cart-wright be found in all the county, to make the necessary farming utensils in a sufficient manner, or of a proper construction. In these circumstances, every person, who was anxious to improve his land, imported ploughs, carts, harrows, &c. of an improved construction from London, or from the port of Leith. But as the demand for machines of a nicer form, and more substantial make, increased, several young men were induced to go from home, and serve apprenticeships with skilful masters; so that properly-bred smiths and carpenters of all denominations are now settled in most of the low and central parts of the county. Owing to the want of proper wood and encouragement, and there being no demand in the Islands and Western Highlands, skilful artificers have hitherto declined to go thither.

There are ploughs of various constructions, but that generally used is the improved Scottish one, which is

* This shows how easily thorough-bred farmers may be obtained from among the natives, by sending young men from home to learn the business.

made in the county, of every size, and with or without mould-boards of cast-iron, according to the option of the employer. On gentlemen's farms we find large harrows for breaking coarse ground, drill-barrows, rollers, fanmills, thrashing-machines, and carts of different constructions, with every other agricultural instrument employed by farmers in any part of Scotland. But very few of the common rank of tenantry, have shewn an inclination to adopt the style of dressing their ground in a manner which renders these implements requisite.

The late Mr. Davidson of Cantray, was the first to construct a thrashing-mill which was driven by horses. He imported all the parts of the machinery from Leith, and brought the tradesman at the same time to join the parts together, and set the machine to work: Mr. Forbes of Culloden, Mr. Robertson of Inches, Governor Stuart at Fort George, Mr. Grant at Rothiemurchus, Major Fraser of Newton, Mr. Anderson, minister at Kingussie, Mr. Mitchell at Gordon-hall, and no doubt many other improvers in various parts of the county, have not only thrashing-machines, but many other implements of husbandry, which are used in the southern counties. Mr. Young, formerly mentioned as having several Spanish sheep, shewed me a machine in the form of a brake-harrow, drawn by one horse, with two handles, for cleaning couch-grass and other fibrous weeds from ploughed land. Its execution is very great, not only in cleaning but pulverizing the soil, where the ground is level, and free of obstructions. Machines are also made in the eastern districts of the county, for bruising the succulent tops of furze to make provender for horses, in seasons when the crop of grain is short, and
straw

straw and hay scanty. The year-old shoots of this plant afford a convenient substitute at a small expense, which is at the same time rich and wholesome food. The common class of farmers, who have no machines for that purpose, beat these tops of furze with the flail; by which means their horses, it is said, with very little other subsistence, are enabled to carry on the labours of the spring.

CHAP. VI.

ENCLOSING.

THE enclosing of land and the planting of trees was enjoined upon every proprietor in this kingdom by the Scottish parliament, so early as the year 1457; and the extent was fixed according to the valuation of their respective estates. The enactments of this statute were renewed and enforced by various subsequent acts, under such sanctions and penalties as the Legislature of these times deemed to be most effectual and coercive.

Over all the Highlands of Scotland, and in this county in common with others, the practice of building what are called head-dykes, was of very remote antiquity; insomuch, that there is no record either by acts of parliament, or in history, to ascertain the æra in which they were erected: even tradition itself is so silent, that it affords no assistance on this subject. These enclosures exhibit the most evident features of extreme old age; and probably were found necessary to be constructed, so soon as the country was first inhabited, or any division of property made, relative to the soil. This was the only security in these times, for defending the growing corn from the cattle grazed on the hills; and in many places, it is the only fence for that purpose, to this day.

The head-dyke was drawn along the head of a
farm,

farm, where Nature had marked the boundary betwixt the green pasture, and that portion of hill which was covered totally or partially with heath. It was more substantial and better formed in some cases; in others, more rude and simple, according to the taste of the times in which it was constructed, and probably in proportion to the interest or encouragement of the occupier of the farm. Above this fence the young cattle, the horses, save when they were required to collect the fuel, the sheep and goats, were kept in the summer-months. The milch cows were fed below, except during the time the farmer's family removed to the distant grazings called shealings. Beyond the head-dyke, little attention was paid to boundaries between the tenants of the same estate. Among the small farmers of Inverness-shire, this practice remains in full force; but wherever extensive grazings are in the hands of great sheep-masters, or where gentlemen farmers possess a tract of hill-grass annexed to their arable farms, these are careful to keep neighbouring cattle of all kinds from their hills, because they generally study to have this kind of pasture in good condition at all seasons of the year. The small tenants carry their indifference as to boundaries still farther. Whenever the corns are reaped, and the potatoes collected, the whole neighbourhood, both hill and strath, becomes one great common, as the moors had been in summer.

The boundaries of different proprietors are ascertained on the opposite sides, by a common ridge of hill, or tops of mountains, as *wind and water shares*, which expressions are understood, with more accuracy, to refer to the tendency of water from rain or springs, as it flows to different sides, or as the words also denote,

denote, the lee and windward sides of the common ridge. On the face of hills these boundaries are marked generally by a rivulet, or a rock, or a large stone; and in the valley below, by the margin of a lake, or the side of a river. If it be a lake, the fishing upon his own side belongs to each proprietor, unless there exists a stipulation to the contrary; and if it be a stream powerful enough to drive a corn-mill, or any other machinery, the half of the water belongs to each conterminous heritor.

When the owners of estates thought seriously of advancing a step in the improvement of property beyond the primeval, simple, and sole fence of a head-dyke; or when farmers wished to save their crop more effectually by additional enclosures, it naturally occurred to surround each field which was most exposed, by a ring-fence. Those fields claimed their first care, which were the driest, the most fertile, and the easiest to be reclaimed, of the land near the head-dyke. By being remote from the dwelling-house, and manured in rotation by the folding of cattle, they were called *out-fields*; whereas the land adjacent to the farmer's residence, which received all the benefit of the house-dung, got the name of *in-fields*. Every out-field generally comprehended as much ground as could be manured in one season, from which three crops of oats were taken successively: by these means the farmers had three out-fields under crop every year. The materials of which these rude fences, round the out-fields, consisted, and the manner of constructing them, were in all respects similar to the head-dyke. The labour of repairing fences made mostly of sod, has in many instances induced the tenantry to relinquish such a toilsome undertaking, which was returning upon them year

year after year; so that now, and perhaps for some generations past, nothing appears in many cases but their ruins. It was at all times necessary to have an interior fold of less dimensions, constructed of timber, in the form of a circle of gates or hurdles, which was removed every eight or ten days to a different part of the out-field. Without a precaution of this kind, the farmer could not have the dung equally spread. Where wood was scarce, these interior folds were made of a single row of sods, piled upon each other to the proper height; which divided the field into a variety of sections, resembling the panes of glass in a window. A considerable proportion of the county remains still under this slovenly system, with very little alteration. Yet near the mansions of proprietors, and on a few of the farms of the most substantial tacksmen, the land is regularly divided into separate enclosures, with stone walls or hedges, as most convenient; and well sheltered with belts of planting. Nevertheless, the adjoining tenantry, who every day see these enclosures, and must be sensible of their benefit and beauty, sit with their hands across, during four of the best months in the year, from the end of the sowing season to the beginning of harvest, except the time spent in providing their fuel. Plenty of stones, and, as was formerly said, the finest of stones for ordinary purposes, are almost in every place to be found; and the Highlanders of Inverness-shire, in common with all other men, ought to attend to their own interest.

What may be the real cause of this indolence, or rather apathy, it may be difficult to divine. Perhaps it may be owing to a combination of causes. 1. It is supposed to be occasioned partly by their prejudice in favour of ancient customs. 2. It is also ascribed to their

their fondness for promiscuous pasturage, to which mankind in general, in one state of society are very much attached. Not many years have elapsed, since the vulgar in Ireland could not endure to see an enclosure. What one person built by day, another destroyed at night.—3. It may be occasioned rather, by their having no permanent interest in their possessions: no man, who is a tenant at will, can be expected to bestow labour or expense upon his farm, beyond what may bring him the greatest return for one season. But give this man an interest in the produce of his farm, during fifteen, twenty, or thirty years; and he becomes a very different person.—4. An additional cause may be, the want of proper examples set before them, by people of their own rank and circumstances: a poor man never thinks of attempting what he sees only a rich man or a great man do: that is an undertaking which he considers to be entirely beyond his reach.—5. It is also alleged, that a certain degree of indolence, and aversion from labour, is constitutional to this race of men. The justness of this charge I can hardly allow: we find them as active, when employed in the quality of servants; we find them fully as intelligent; we find them more hardy, than persons of the same class in the southern counties. And will not men exert themselves as much to procure subsistence and some of the conveniences of life for themselves and their families, as a hireling does to earn his wages? No man, who knows the feelings of a parent, will hesitate a moment to answer this question by a strong affirmation.

We are not left to the evidence arising from the general principles of human nature, to infer this consequence; there is proof positive in many instances,

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that

that this very people have not only the power, but the inclination, to exert themselves for promoting their conveniences and comforts, unless some untoward circumstances thwart their endeavours. I saw in many places on the West Coast, composts made of moss, dung, sea-weed, and ferns, at the doors of cottages. On the south side of Lochaingcart, in the district of Moidart, the sea-ware was carried on people's backs, up from the shore, by paths where no horse ever had gone, or could go. There was in various places, corn growing in shelves of rocks, where no plough had ever entered, nor a horse had ever trodden. In various parts of the northern districts, remote from the benefit of sea-ware, large pits were dug up of a tilly substance, to give firmness and consistency to a loose mossy soil. But notwithstanding these and other marks of industry, this people are roundly, and in the lump, denominated a generation of sluggards, and branded with constitutional slovenliness which it is impossible to remove. There must be some mistake in this opinion, which seems to be too hastily taken up, without inquiring into the cause. Their indolence may be owing to their situation, more than to themselves. They have sufficient acuteness to discern the wretchedness of their situation, and feeling sufficient to perceive its pressure. They in many cases see no remedy, but either to fly from their country, or to sit down in the indolence of despair. Their poverty for the most part puts a stop to emigration, and their want of encouragement debars their industry.

It might be easily demonstrated, that some of these alleged causes of indolence are not imputable to the poorer classes of the inhabitants, and that they feel the

the influence of others, in common with the rest of mankind. How can they depasture their grass but in common, where there is no division, and no enclosure? How can they divest themselves suddenly of ancient prejudices, more than other men? How can they understand the nicer operations of agriculture, without being taught by the example of their own equals in rank and fortune? Where is the man in any other country, more than in this, who will improve his farm, hitherto in a state of nature, without a certainty of enjoying the fruits of his labour for a term of years? Or who will make enclosures, or drain or clear coarse land, without a prospect of being reimbursed? When this subject shall be resumed in the sequel, and treated as its importance requires, it will probably appear, that one is blamed, while another is in the fault; and that the sloth imputed to the Highlanders, is not altogether to be laid to the charge of the occupiers of the soil. At one period, the inhabitants of every county in Scotland were in the same predicament; but by the exertions of the landlords, and the favourable nature of their climate and soil, in the southern counties, they have emerged from obscurity, have relinquished their indolent habits, and have acquired both wealth and reputation.

The districts of the county of Inverness, which are adapted to the arable system, must some time hence (and it is to be hoped soon) come forward to understand and practise the cultivation of land; and as a preliminary step to all improvement, to have separate enclosures for different kinds of crop.

In the sheep countries, the necessity of enclosures is not so apparent, nor are they so easily upheld; but even in these, it were profitable to have at least one

enclosure to separate their winter grass from the summer pasture; which cannot be done if the whole farm be completely open. This fence, as was hinted above, ought to be made of stone, and of sufficient height to prevent the leap of sheep, with openings of three feet high and two feet wide, at the bottom of the wall, in every 200 yards, and in a dry place, to let the sheep out and in, when it is needful. When once the sheep are accustomed to these avenues, they will not make such violent efforts to overleap and destroy the walls. These openings may be shut at the season in which the sheep ought to be excluded. Such an enclosure may be extremely useful, not only by affording plenty of nourishment to the flock, in the most trying season of the year, but by enabling the store-master to have a change of grass for his lambs, at the time they are threatened with the braxy, a disease so fatal to them on the approach of winter, and for which no antidote has been hitherto found equal to clean grass.

The double stone walls without lime, are not near so effectual a fence against sheep, as the single stone walls, provincially called *Galloway* or *snap* or *rickle* dykes. The larger stones are laid in the foundation; and in every opening between the top of these, the next stones in respect of size are laid longitudinally across the wall, and so carefully, that they neither lean to one side nor another; and so on, until the fence be of that height which is required. These walls have such a tottering and alarming appearance, that all kinds of cattle are terrified to attempt them: and as an additional recommendation, they require fewer stones, are more expeditiously built, and last as long as the double stone walls without lime. In fact, no kind of stones are too shapeless for being used, and no person

person so unskilful as not to succeed in the building, since the principal art required, is no more but to lay the centre of gravity of every stone on a firm place of the stones below ; which any man may understand, who had ever made one stone to lie above another.

On the side of Loch Laggan are walls of this construction, built 25 years ago, by Mr. Mitchell now of Gordon-hall in Badenoch, which have remained so entire, that no sheep durst venture to leap over them from that time to this day. They are to be seen in other parts of the county ; and are so useful, and so easily made, that it is to be wished they were more general in all sheep countries.

Even the double stone walls are rendered sufficient to turn sheep, by putting stabs of two feet in the sod or coping, and winding them with bushes, or by putting single ozier withs in the form of lattice-work, wound together in a semicircular direction ; or by laying long stones across the top of the wall, without any sod, so as to project about eight inches over, on both sides ; or lastly, by putting triangular flags on edge in place of coping, with one side down, and a vertical angle at the top. These triangular flags may be kept from leaning to one side, and may be made to serve more wall, by putting small stones between every two ; which also helps to render the fence more terrific to cattle.

In the district of the Aird, and to a considerable distance round the county-town, the land is in general substantially enclosed. Enclosing is not confined by any means to these, there being no province of the county without some enclosed land.

Stone fences are made, where materials are convenient ;

nient; and where stones are distant, hedges are planted, which for the most part are in a thriving condition. Screen plantations are in various cases employed to shelter the ground, which contribute much, not only to the riches and warmth, but to the beauty of the country. The price of each of these kinds of fences depends on such a variety of circumstances, that it would be tedious, and not very useful, to enter upon any detail.

The same judgment is discovered in the places alluded to, which ought to be followed in dividing all farms about to be enclosed. The different fields are generally made in proportion to the extent of the farm. In some places, however, the situation of the ground does not allow this rule to be practised. But where the fields can be made equal, the farmer has only one kind of crop on each field; so that his ground is not like patch-work, exhibiting a variety of appearances within the same enclosure. Every judicious farmer knows, that to divide his farm in this manner, when it can be done, is not only ornamental, but in a high degree convenient.

Very little indeed had been done, according to the most authentic information, in the line of enclosing, previous to the last forty years. Nothing was to be seen before that period, but open ground or a few awkward sod fences, except in the immediate circuit of some gentlemen's houses. The present generation therefore deserve great credit for what has been done, in most districts, since that time: and it is pleasant to observe, and no less so to record, that the practice of enclosing with mud-walls, or partly mud and partly stone, has not only been discontinued, and substan-
tial

tial stone walls or hedges substituted in their place ; but, that this species of improvement is both general and progressive.

The farmers in some districts complain (and it is much to be regretted that they have any reason to complain), that though they were to enclose at their own expense, no recompense would be given by the proprietor at the termination of their lease ; and that on some estates, where it had been the former practice to allow the tenants meliorations at their removal, according to the value of enclosures made by them, this spur to their industry has been withdrawn. It does not by any means appear proper, that a farmer should have leave to enclose, *when* and *where*, and with *what* materials he pleases, and that the landlord should be bound to reimburse him for the value of such enclosures ; nor does it appear requisite that many enclosures should be made on sheep-farms : yet, that a farmer should have neither any prospect of being indemnified for fences made upon an arable farm, nor that the proprietor will execute these himself, is a dreadful falling off, and a bar to all improvements ; if the property be extensive, the calamity to the country is so much the greater.

Almost every person knows, that when flat land is to be enclosed, where water often lies or springs abound, the fence ought to be an open drain, or hedge and ditch ; but where the land is dry, and stones are at hand, if the saving of ground is an object, stone walls are the proper fence. Hedges are more ornamental ; but in all cases they lodge vermin.

The sufficiency of a stone wall is consulted, by having what are called band-stones going through from one side to the other, at short intervals, and by

never putting stones of the same length immediately above each other in the face of the wall. It is also a good rule, though not *generally* known, never to rest the weight of the larger stones in the second or third tier upon small pinnings put in below to support them; but upon the other large stones in the tier next under them. If any part of this weight is supported by the pinnings, the wall will soon come down. Their use ought only to be to please the eye, by filling up the interstices betwixt the large stones, after these are built.

Where lime is easily procured, the harling of stone walls, would be a saving in the end; and the sand used for this purpose ought to be larger than what is generally taken for building houses. The coping, whether sod or triangular stone, ought to overcap two inches on each side of the wall.

CHAP. VII.

ARABLE LAND.

SECT. I.—TILLAGE.

BY the perusal of the preceding sections of this Report, the reader may infer that the tillage in this county is extremely diversified in different provinces. This difference arises partly from the natural qualities of the soil, or the obstructions to tillage met with on the surface; partly from the inexperience and humour of the inhabitants; partly from the climate; and in a great measure from the sources of the farmer's profit. Wherever the surface is so uneven, or so much infested with rocks and brushwood, as hardly to admit the plough; wherever the climate is so rainy, as to render the corn crop very precarious in harvest; and where the possessor of a farm trusts to his cattle for the payment of his rent; it would be vain and even absurd, to expect the same tillage which we meet with in countries more favourable for the operations of the plough.

Nevertheless, in some of those parts of the county of Inverness where an arable system can be followed with advantage, especially on most of the farms in the hands of persons of education, who have looked around to what is going on in the world, we find proofs of the cultivation of their soil, which merit high commendation.

mendation. But these appearances are rare, being confined to a few spots of this extensive shire, which have fallen to the lot of enterprising, judicious men. The greater part by far of the county is in the hands of persons astonishingly ignorant of the modern improvements in respect of tillage. While the former have their ridges as straight as a line, their fences all made at right angles, where the land allows it, their ploughing skilfully executed, their rotations judicious, and their returns demonstrative of their professional knowledge and application; with the latter, the reverse of this must disgust a traveller: crooked ridges, and of unequal breadth, which are sometimes small at both ends and swell out in the middle; obstructions to the plough in every field, as nature left them; the furrows turned over in a clumsy manner and gaping asunder, with every other sign of ignorance and inattention. My bounds, however, will not allow room, under this article, to enumerate those, whose luminous understanding and activity of spirit enable them to execute this business properly, nor the numerous herd of those, who discover no taste in the management of their farms, and seem to have no object in view, at every seed time, but to give their land a red surface.

In the eastern and lower parts of the county, horses and oxen are employed promiscuously in the plough. When the land is stiff and heavy, eight oxen are sometimes yoked together; in lighter soil, six or even four are deemed sufficient. Other farmers yoke two horses and four oxen, or a pair of each.

The predilection in favour of horses proceeds not only from an opinion of their making more dispatch, when the farmer is in haste to execute his work, while the favourable opportunity remains, but also from
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the circumstance of their not requiring a driver when two are yoked by themselves. The practice of ploughing with two horses is daily becoming more general; and the necessity is acknowledged of using a breed which is more powerful, and of a better figure, than those formerly employed: and there is little doubt, unless the farmers are more blind to their own interest in this case than in many others, that this custom will soon become universal.

It gives me concern to be under the necessity of reporting, that in any part of this county, eight oxen are yoked in one plough. The arguments which are every day held up to the public notice in favour of oxen are so convincing, that this useful animal must come more into repute, for the draught. But why eight oxen in one plough is inconceivable? It might with equal propriety have been eighty. Nothing can be more injudicious, in a variety of respects, to the employer himself, besides that it has a tendency to deter others from using oxen. What a prodigious waste of strength! and what a vast expense to accumulate and support that superfluous strength? *In the county of Perth, and it is to be presumed in many others, two oxen without a driver, plough, in any kind of land, as much, and the work is as well executed, as a pair of horses can perform: and that I may not be thought to deal in the marvellous, I quote the instance nearest myself, the farm of James Stirling, Esq. of Kier*.*

In the drier districts of the county, especially on a light soil, harvest and winter ploughing is much practised, and found to be profitable; because land of

* Communicated by John Buchanan, Esq. of Cambusmore.

this description retains more moisture to nourish the succeeding crop, than when turned over immediately before the seed be cast into the ground. Another reason to encourage this practice is, that the frosts in this climate are less severe in the latter end of autumn than in the beginning of spring. I saw one instance of lea-ground being ploughed so early as the middle of August. If manure had been laid on lea about Lamas, where there is little or no declination; to plough it down in the beginning of October seems to be very proper, because the manure mixes more intimately with the soil, and is protected from the corroding effect of the winter frost. Another rule in some places of the county is, that where the land has been much exhausted by a succession of scourging crops, the farmer ploughs his land across the ridges in the autumn. In the spring he harrows it sufficiently, and then gives it another ploughing with the manure, when it is to be sown with barley. These operations indicate a tendency towards a regular fallow.

If light stubble land be ploughed before winter, the soil is washed away, where the declination is considerable, unless the practice of water-furrowing be carefully observed; insomuch, that the benefit derived, in choking the weeds, by this operation, is nearly balanced by the quantity of the finest of the soil, which is carried off during the winter rain, especially in a very moist climate, where deluges are poured down in winter, great havock is done upon all loose soils.

Ribbing is practised in other counties, and seems to be the only species of winter-fallow which is profitable to land of this loose texture. Every furrow is turned over on a foot of solid ground, from the beginning to the end of the ridge, *i. e.* every alternate furrow

furrow is left untouched, and the ploughed furrow is turned over above it; so that the greatest surface possible is exposed to the meliorating influence of the atmosphere, while at the same time the loose soil is out of the reach of the little rills which run down in the different ruts. If the stubble has been somewhat luxuriant, and the work done early after the crop was removed, the two strata of stubble meeting and fermenting under cover of the red furrow, form an aid to the subsequent manure, while the weeds are no less smothered than when the whole land is turned over by a complete ploughing. Nevertheless, when the use of green crops becomes general, and the planting and hoeing them is neatly performed by the plough, this will stir the earth more perfectly, and pulverize and clean the soil more completely, than any winter-fallow or ribbing can possibly accomplish.

There is hardly a single point in husbandry, about which there is not a diversity of opinions, among men, who in other respects discover a considerable soundness of understanding. This happens no more in other matters, than in determining the depth at which land ought to be ploughed; which to a plain man, would appear to afford little or no room for dispute. The depth at which land ought to be ploughed, seems to be no mystery. It is plainly shewn by the land itself; and depends entirely on the nature of the soil. Some soils on a gravelly or sandy bottom are so thin, that if ploughed with a deep furrow, the productive earth is thereby buried so far below the surface, that no crop can be expected the first season. This happens also when the subsoil is a hard or wet till. Other soils may be so deep and rich, that the more that is brought up of fresh mould and mixed with the soil formerly in action,

action, so much the better. No crops are equal to those produced by a mixture of virgin-earth. The safest time for trying experiments of ploughing deeper than ordinary, seems to be in a summer-fallow. Exposure to the atmosphere meliorates the most inert soil. The stiffest till or the coldest clay, imbibe new and better qualities during the various stirrings of a fallow. In this way alone, it is safe to bring up a little gravel or sand, especially before liming or marling; seeing it is wonderful how much these properties of soil are changed by this management.

When a field has so great a declivity, that it cannot be ploughed in the ordinary way, some people turn the soil constantly down-hill; by taking one furrow, for every *bout*; as it is called, or every two turns of the plough; so that double the time is spent in performing work after this manner, to that which is done in common; and a great mound of the best soil is gathered at the bottom of the field, while the upper part is peeled quite bare. Others form the ridges in such land straight up and down, by which means more horses than ordinary must be yoked in the plough. It is now found, that such fields ought to be ploughed diagonally; which is accordingly done, by the most skilful farmers, in those places where land of this description occurs. There being only two diagonal lines in every four-sided figure, that reach from the angles below to those above, very little attention will suffice to discover which diagonal direction ought to be taken, in ascending with the plough. Standing at either end of the line at the bottom of the field, and looking upward, first from one corner and then from the other, any man who has ever handled a plough will at once make choice of drawing his ridges, parallel

rallel to the diagonal, which inclines towards his right hand. By ploughing steep land in this manner, much labour is saved to the horses, the furrow falls easily off from the share in ascending, and the soil is prevented from being accumulated in a large bank of inert earth at the bottom.

What occurs to me upon the subject of ridges being raised or flat in the crown, the circumstances which ought to regulate their breadth, and the easiest way of straightening those that are crooked, is taken down at some length in the Survey of Perthshire, which cannot conveniently be abridged into an abstract.

When a round hill is to be dressed, in order to be laid down for grass, it ought to receive the last furrow by going round in a spiral line, without ever turning the plough, beginning at the base and ending at the top. The spiral furrow is the neatest method of finishing off a lawn, even of flat land, near a gentleman's house, because it brings the whole surface to an uniform appearance, and pleases the eye more than having the lawn striped with furrows. Nor is it half the expense of dressing a piece of ground with the spade, which is the common way, and is in all respects as beautiful, when finished.

SECT. II.—FALLOWING.

THE general use of fallow, in one shape or other, is at all times, and in all countries, a symptom of an improved system of agriculture. Wherever the farmers are indolent and spiritless, you never see any thing

thing which can be called a fallow; on the other hand, where they are intelligent and enterprising, much attention is paid to this mode of restoring vigour to that part of their land which has been, in a certain degree, exhausted, or rendered foul by white crops.

A small part, and only a small part, of this county, lies along the East Coast, and being a stubborn heavy soil, the practice of clean summer-fallow is to be expected in that district alone. Besides these, it appears that the best farmers in the Aird, such as Messrs. Fraser of Belladrum and of Newton, the proprietor of Relic, Captain Fraser factor to Lovat, and some others, have a bare fallow in every rotation of their mode of cropping. This judicious restorative of the soil is also frequent in the vicinity of Inverness, where the culture of land is well understood, and successfully practised. In the Lordship of Petty, and near Fort George, and likewise in some places of Strathspey, my information leads me to say, that this species of fallow is coming into repute, and occasionally put in practice by the best farmers.

In most of the other provinces within the county, to which this Survey refers, the fallowing of land is carried on by the green crops of potatoes and turnips. Every man in the county who has the least pretensions to the character of a farmer, plants his potatoes in drills; and whoever cultivates turnips in the fields, sows them in the same manner. None but the poorest of the people, and such as are most obstinately wedded to old prejudices, plant potatoes in beds; unless it be in such land as cannot, in the first instance, be wrought with the plough. It would be endless to enumerate all the places, where the potatoe husbandry is carried on in the greatest perfection. At Fasfern, at Annat,
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at Inverlochy, at Keppach, at Blarour, in some farms on the sides of Loch Oich, at Fort Augustus, Invermoriston, Glenelg; over all Urquhart, Corrimony, Strathglas, along the whole coast side; at Gortleck and Farraline in Stratheric; in many parts of Strathnairn, from Cantray to the very source of the river; in Strathdearn, Strathspey, and Badenoch, and in many other places, the potatoes were in the highest luxuriance, and in the best order, all drilled with the most exact regularity.

The turnip-husbandry is firmly established, and nearly as general as that of the potatoe, in all these districts. The latter plant was the first introduced, is the most useful for human food, and still maintains its superiority; but the former is following close in its train, and bids fair for being even its equal, in claiming the attention of the inhabitants, as a nutritious food for cattle, and a good preparative to the ground for crops of grain. This is the fallow most generally in use, over all the Highlands both of this and other counties, and a most judicious fallow it is; well adapted to the nature of the soil, to the circumstances of the people, and to the qualities of their climate. It is not denied, that both potatoes and turnips exhaust the ground to a certain degree, while a bare fallow only enriches: nevertheless, in a light free mould, such as the soil of these countries is found commonly to be, in a mountainous region, bordering on a vast ocean, where neither the arable ground can produce grain sufficient for the consumption of the inhabitants, nor the rainy climate suffer them to reap in safety and preserve the grain they sow; what can be more demonstrative of the good sense of the natives, than the uncommon attention, which is now given to the cul-

ture of these most useful plants; while at the same time, the ground is brought into a fine tilth, equal to any complete fallow, for a future crop of grain. About six or seven years ago, when all the corn-countries in the south of Scotland were alarmed with the dread of a scarcity, almost equal to a famine; when the humanity of Government was exercised in laying out vast sums to purchase grain from abroad, and in sacrificing the revenue arising from distillation at home; the Highlands of Scotland, and this county among the rest, felt so little, comparatively, of the pressure of these calamitous times, that potatoes were sent down to relieve the wants of the Low Country. Go on more and more, ye brave Highlanders! to practise your fallow crops; extend them still upon a greater scale, and spread plenty over the face of your country. Leave their naked fallows to those countries, whose soil is more sluggish and cohesive than yours: let your fallowing be always a green crop.

SECT. III.—ROTATION OF CROPS.

OF all the signs, which point out the progress or perfection of agriculture in any country, there is none more certain than the rotations which the farmers observe in cropping their land. If there be no regular changes in the species of crop, suited to the nature and circumstances of the soil, the farming of such a place is in a most miserable condition; but if the arable ground be regularly kept in a productive state, by judicious rotations, the interest of the tenant is promoted,

promoted, and his good sense rendered apparent; the benefit of the landlord is secured by the improvement of his estate; and the public good is increased, by rendering the fruits of the earth more abundant in the means of supporting mankind.

Complaints are made against the lower rank of farmers in every district of this county, for neglecting to observe any regular rotation. They seem to have no rule of cropping their ground, but one; whenever they give it any manure, to draw out the strength of that manure as fast as possible, until the land be reduced to such a state of barrenness as to carry no more grain without being rested.

The most common rotations in the county of Inverness, are exhibited in the following table.

Table of Rotations.

1. On heavy Land in the Aird.	2. On Land not so heavy in the Aird.	3. On the same Soil in the Aird.	4. On strong Land near Fort George.	5. General on Land near Inverness.	6. On the light Loam of Stra- thetic and Strathspye.	7. General in Badenoch.	8. General in Loch- aber, Arasaig, and Glenelg.	9. General in Ur- quhart, and north side of Lochness, where any.
1. Fallow.	Oats.	Oats.	Oats.	Green crop.	Oats.	Green crop.	Potatoes, or turnips.	Fallow crop.
2. Wheat.	Barley.	Barley.	Oats.	Barley, with seeds.	Oats.	Barley and seeds.	Barley, with seeds.	Barley, with seeds.
3. Pease.	Pease, pota- toes, or tur- nips.	Pease.	Pease, turnips, or potatoes.	Hay.	Pease, turnips, or potatoes.	Hay.	Grass.	Hay.
4. Barley, with grass-seeds.	Barley, with seeds.	Oats.	Barley, with seeds.	Hay.	Barley and seeds.	Oats.	Oats.	Pasture.
5. Hay.	Hay.	Turnips, or potatoes.	Hay.	Pasture.	Hay.	Oats.	—	Oats.
6. Hay.	—	Barley, with seeds.	Hay.	Oats.	Hay.	—	—	—
7. Pasture.	—	Hay.	Pasture.	—	Pasture, same as No. 4.	—	—	—
8. Oats.	—	—	—	—	—	—	—	—

Every person will form a judgment of these rotations, according to the system which he has adopted as the best mode of treating particular kinds of soil. Among such a diversity of opinions as may be held on this point, it would be vain in me to expect that my decision on this, or almost any other polemical question, can pass without animadversion; yet a regard for my responsibility to the Board of Agriculture, urges me not to treat this part of the subject with neglect.

1. The first of these rotations meets my entire approbation: there is no fear of exhausting such land by three white crops in eight changes, if the rent can allow it; but it is found necessary in other counties, where a heavy rent is demanded, that the land be sooner broke up from grass; and perhaps the sixth year ought to be in pasture.

2. The second is also favourable to the ground; particularly if there be two crops of hay, which perhaps may be the case, though I neglected to take it down. Would not the pease do better between the oats and barley, and let the turnips and potatoes stand by themselves, before the second crop of barley? But this proposal is made with great deference to the judgment of the intelligent gentleman who gave the note.

3. With equal respect to the opinion of another gentleman, I fear he would need to give manure to his first crop of barley, which stands immediately after the first oats.

4. If the land be very strong, perhaps it may be able to bear two successive crops of oats, after being three years in grass, provided all the foggage of the hay crops be consumed on the ground: it might, nevertheless, be as fair a rotation perhaps to throw the

crop of pease betwixt the two crops of oats, and to let the turnips and potatoes form a change by themselves.

5. Nothing can be superior to this rotation.

6. The remark made upon No. 4, is equally applicable to this rotation.

7. May I venture to recommend to my friends in Badenoch, to substitute some other crop betwixt their two successive crops of oats? The climate being unfriendly to pease, except the early kind, perhaps they may give one lot of their ground to potatoes alone, and another to their turnips, both of which they cultivate with great success; thus substituting potatoes between their two crops of oats, and having six changes in place of five.

8. I hope the gentlemen in Lochaber, Arasaig, and Glenelg, will extend their rotation in the manner just now recommended to their brethren farmers in Badenoch, where the bounds of their arable land will admit of doing so. It is of the utmost consequence to have abundance of green crop. Plenty of potatoes will suit well to plenty of mutton, and keep them from the meal markets of the Low Countries; and plenty of turnips will form an excellent substitute for hay, and render their cattle plump and hearty in spring, the season in which they formerly used to fall off and die, yielding nothing but the hide.

SECT. IV.—CROPS COMMONLY CULTIVATED.

HOWEVER gentlemen versant in agriculture may differ in opinion about the propriety, in a national point

point of view, of throwing large tracts of the low country under grass for feeding cattle or sheep; yet that portion of land in the Highlands, which nature has adapted for an arable system, is so scanty, that a very great proportion of this country must remain under grass in all time coming. I avow, that my own opinion has always been in unison with those who contend, that any number of acres of arable ground, under a judicious rotation of cropping, will produce more human food for a length of years, than it can possibly do by being depastured with any species of cattle, during the same length of time*; and although at all times open to conviction, I have neither heard nor read any thing said or written on this subject, which has changed that opinion. The great object, to a person who has only the good of the commonwealth in view, is to inquire whether more people can be supported in the one way than in the other, and whether the arable system or the grazing system, adopted upon arable ground, will support the most numerous population. On this single point, the question turns; and it can only be determined by matter of fact. In this county there is little hazard of a great extent of arable ground, being left in pasture for a long time, unless depopulation increase to a most deplorable degree; therefore the question alluded to, shall at present be left at rest.

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* A Note by a Gentleman appointed by the Board to revise this Report, before it went to the press.

"There can be no doubt whatever, that a field of given extent will produce farinaceous food for a greater number of men, than the like field will produce for them of animal food."—*Sir John M. Murray, Bart. of Lanrick.*

WHEAT.

The parish of Kirkhill, in the Aird, has more wheat than any other district of Inverness-shire. A little of that grain is cultivated in the vicinity of the county-town, and adjacent to Ardersier, and also in Strathspey; but upon the whole, wheat does not seem to be adapted to the general texture of the soil or climate of this county.

Under the article of rotations, it was said that wheat is sown after a bare fallow, in which case the land is prepared by giving it one ploughing in the preceding autumn; another in May, and two or three more in the course of the summer and harvest, as may appear requisite to bring the land to a proper mould; always taking care to harrow well between every two ploughings, and to plough every time in a direction opposite to the last. Wheat is also sown upon lea after being well dunged. But there is so little of this grain cultivated in the county, that it is unnecessary to enter particularly upon the proper manner of pickling—to mention the various kinds of seed—the proper season of sowing—the culture of it while growing, or the harvesting.

Mr. M'Donell of Glengarry, grows a little wheat for his own family, which he grinds into flour by a steel mill. The late minister of Kilmanivaig cultivated a little wheat every year during his life; which shews that this grain will grow no less in the western than eastern part of the county.

PEASE AND BEANS.

The harvesting of these crops is so precarious, that they are cultivated in very few places within the bounds of this Survey. Besides the early frost and the heavy rains in autumn, to which the Highlands of the county are liable, the soil is for the most part too light to carry beans. The farm of the Hon. James Stuart, Governor of Fort George, is the only spot in all the county, where I saw pease and beans in the open field, which were sown together, and drilled with all the regularity that could have been shewn by any farmer in the county of Edinburgh. The crop was good but not luxuriant. Had the soil strength sufficient to bring beans to maturity, this mixture and this mode of sowing, is of all others the most proper. The tendrils of the pease clasp about the beans; which keeps them from lying on the ground, increases their fertility, and prevents them from rotting.

The beans, by having more air at the root when sown in drills than in broad-cast, have pods down to the ground; and both plants become more luxuriant and productive by the accession of fresh earth from the hoeings. In the Aird there are a few beans. At Keppach, Mr. M'Donald of Glenco had a most excellent crop of pease; and indeed all his grain was very superior. At Aberhalder, near Loch Oieh, and in general east from the great valley of the Caledonian Canal, except Badenoch, pease constituted a part of the farmer's crop.

BARLEY.

In the lower parts of this county, towards the East Coast, the farmer no doubt depends much on his grain,
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both for the payment of the landlord's rent and for his own profit. In the Highland and Western districts, on the other hand, the sale of the cattle which he rears on his farm, determines the amount of his finances. When distillation goes on briskly, and when the barley of the county has attained such maturity as to be sought after by the distillers, the money drawn for that grain encourages the farmers where it grows, to cultivate great quantities.

The fluctuation incident to the laws that regulate distillation, which it seems cannot be avoided*, not only embarrasses the distillers, but distresses beyond measure the farmers, whose rent depends perhaps on the quantity of this grain they had sown. Before they can bring the produce of a particular season to market, a new regulation often renders their barley unsaleable, or of little value, and knocks their industry to the ground. The Scottish farmers, and those in the county of Inverness in common with others, have not only had the unsteadiness of the excise laws in this respect to struggle with; but a late regulation, which, although it does not put a stop to distillation in the Highlands, will effectually ruin the growers of barley, in that country, by having fixed the duty on malt to be equal on Scottish and English barley, has rendered barley of the former kind completely a drug, which no distiller of common understanding inquires after, because he must pay the same duty for an inferior

* It may and ought to be avoided. It is a gross, though not an intended, injustice, to the Highlanders, to shut them out from the general markets of the kingdom; and it is unjust to their southern neighbours, that the Highlanders cannot send them a wholesome spirit. Some interested persons have thrown a film over the eyes of men in office, who certainly must wish equally well to all.—*Sir John M. Murray, Bart.*

grain,

grain, which he has to pay for one much superior. Although my information on this degree of inferiority might authorize me to say what it is generally estimated at; yet when the business is depending before the National Legislature, delicacy forbids any more to be said on that subject; not doubting that equal justice will be done to every part of the empire, and that a fair ratio will be established betwixt the value of barley raised in England and in Scotland, when used in distillation. How absurd to suppose, that grapes or peaches raised under the genial rays of the sun along the track of the Thames, are not more enriched by the fructifying influence of that all powerful luminary, than the crabs and sloes of the boisterous climate of the north of Scotland, where the sun frequently does not for weeks in the autumn shew his face! The same cause must affect grain of every kind, and all the other fruits of the earth.

That species of the grain, which is known by the name of big or bear, is the most generally sown in the county under consideration. This kind of barley has four rows of grains in the ear, and two of these rows have, for the most part, double the number of grains that are in the other two rows. A very singular circumstance in the history of this grain was reported to me, which is, that though the best real barley of two rows, that can be procured, be sown in some parts of the county of Inverness; the produce in three or four years is not barley but big, so much does it degenerate in this climate. This information, if correct, implies a presumptive proof that big is not a distinct species of that grain, but a degenerated produce of real barley, which Nature has accommodated to this northern latitude and soil.

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Without the smallest disparagement to the veracity of the gentleman who gave this note, it is possible the matter may resolve itself into an inaccuracy in marking the progress of the experiment, or the competition between these plants. It is known that barley requires a better soil and climate than bear; neither is it so productive, when sown together in the same field, in any proportion; nor does it always ripen in the same circumstances, so as to be equally fit for seed. In this case the bear being a hardier grain predominates gradually, until in a few seasons the barley will nearly disappear. In every struggle between plants of different qualities, we see that the baser gets the mastery, unless the other be rescued from his antagonist by human industry.

In the best and richer soils, barley thrives tolerably well, and big in the poorer; and in some places the farmers sow both kinds. The big raised from sea-ware, which is often used as a manure on the West Coast, is not so heavy as that manured by the dung of cattle: the difference of the quality makes the latter bring two or three shillings in the market more than the former; and yet there is no doubt that the reverse takes place in some counties on the East and Southern Coast of Scotland. Barley raised from sea-ware ripens earlier than that from dung. Perhaps by its coming sooner thus into the market, it may fetch a better price.

A gentleman in the Aird got a present of some Moldavian barley from a friend of his for a trial, which yielded fourteenfold, when thrashed out. No other kinds of barley occurred during the course of this Survey.

In some parts of the county, which are by no means the most elevated, nor the most exposed, it was astonishing to see barley and oats growing promiscuously throughout

throughout the same field, whatever were its bounds. This circumstance, when it first occurred, produced a suspicion that the people had been so foolish as to sow these different grains at the same time, and in the same ground. Nevertheless, upon making inquiry, it was found that these oats were spontaneous, and sprung up wild in every barley field in particular districts of the county.

This was such an uncommon circumstance, that it merited a minute investigation. After various interrogatories put to men of observation in several parts of the country, the facts collected are these: where the land is predisposed to carry such oats, let the barley sown be ever so clean, they will spring up amongst it, and even among other oats; though they are more discernible when rising in the barley field. After a fallow with potatoes or turnips, they will make their appearance in the succeeding crop of barley. Nay, one gentleman, whose veracity is unquestionable, told me that he has seen a field infested with this oat, which, after being completely fallowed with a crop of potatoes, had been laid down with barley and grass-seeds. The next two years a hay-crop was cut in July, before the oats which forced their way had time to ripen; and yet whenever that field was ploughed after these repeated dressings and the two crops of hay, the latent seeds of the wild oats rose with the next crop; in this event, that oat must lie dormant in the earth in certain cases, and retain its vegetative power during the period of its inaction.

This innate power of plants, strange as it may appear, is not peculiar to the wild oat of Inverness-shire. We find that broom and furze, after attaining to a certain age, wither and die so completely, that not a vestige

vestige of either is to be seen above ground. Though the field should remain forty years or more in this state, entirely free from broom or furze, yet the moment it is ploughed, the latent seeds shew a tendency to spring, and the first season thereafter, in which they are not disturbed by the action of the plough, the whole field is covered by these plants. Drain a field of sour moist ground, extirpate all the rushes and sprits, cultivate, manure, and dress and give it a coat of the finest and sweetest grasses: keep it in this improved state for a term of years, without a rush or any other aquatic to be seen; yet no sooner is the field suffered to return to its former state of moistness, than the former aquatic grasses spring up. Nay, introduce water so as to become in some degree stagnant upon any field where a single rush had never been seen to grow, no sooner is the water allowed to remain on its surface, than rushes and sprits grow where they never had grown before, and where no man had sown their seed. Spread some lime or marl on a spot of the most barren ground, if it have any soil at all, and on the second or third season thereafter, a beautiful spring of daisies, white clover, and other sweet grasses, will cover the surface, where no daisy or clover had ever been seen. In the Highland shealings, to which the people move their cattle every summer, at the distance of many miles from the homestead, we find nettles and other rank weeds growing where the cattle are accustomed to lie at night, while not a vestige of these weeds is to be found within many miles of the place. To account for these appearances may not be easy, without supposing that the seeds of plants lie dormant in the earth for any length of time, until they meet with the exposure and other circumstances, which are congenial

congenial to their nature and favourable to their vegetation. May not wild oats be of this class? At one period every kind of grain we have grew wild in the fields, however much they may have been improved by human intelligence and industry.

This oat comes soon to maturity, and most of the grains fall off before the barley, with which it is mixed, is ripe. The grains drop in the same order as in all other oats when too ripe, beginning at the crown, and descending gradually downward to the bottom of the ear. It has been suggested to a gentleman in that country, that trial ought to be made of the best grain on ears of this kind of oat, on account of its being so early ripe and so well adapted to the climate, and to sow these in a field separately, or to improve them for a season or two in a garden, in order more fully to discover the value of this kind of grain, and to ascertain with accuracy how long it requires in ripening, and its other qualities. To procure an oat that would ripen as early as barley, would be a great discovery in a backward climate*.

The season of sowing barley in some places of the county of Inverness, is from the beginning of April to the tenth of May; but the most common seed-time is from the middle of April to the middle of May. Some years ago, the common tenants used to sow their barley much later; but now they are so convinced of the benefit of early sowing, that their barley, and indeed all their grain, is committed to the soil much

* George Dempster, Esq. of Dunichen, had heard something of an early oat, which had been discovered in the vallies of the Grampians, and desired me to make the necessary inquiry. Perhaps it may have been *this* oat. I heard of no other species, which was earlier than common.

earlier than formerly. In the island of Tiree*, the inhabitants sow their barley in June, and reap it in six weeks thereafter. In Callart, and other places on the sides of Loch Leven, the barley is reaped, and thrashed, and ground into meal, frequently by the 12th of August.

In choosing barley for seed, particular care ought to be taken to avoid that which is shrivelled in the rind, because it was cut down before it had been fully ripe. That which is black or mouldy on the end of the grain, had been lodged on the ground by high winds and heavy rains, or had lain long in the sheek exposed to the severity of the weather. That which is of a brown colour, has very probably been heated in the stack, by its being collected too soon. It is easy to discover if it has a mixture of other seeds, or even perhaps varieties of the same. In all these cases, the damaged barley ought to be rejected for seed. Round plump barley, of a bright glossy yellow colour and smooth husk, is always the best for every purpose. Every man, by a little attention, has it in his power to preserve his grain from being adulterated: it is only necessary to pick some of the most beautiful ears, to rub out the grain of these by the hand, and to sow them in a separate place. The increase will soon cover an acre. By this time the process is finished until he require to begin anew. A careful farmer, whose attention nothing escapes, will not grudge the diligence required in this matter, that will be amply rewarded by the benefit resulting from it, which is no less in fact,

* This island was the glebe, or church land, which had been allotted to the monastery of I-colum-kill, from which circumstance it received the name by which it has ever since been known—the *Land of I.*

than the invention of a new, or the renovation of an old species of grain more suitable to his farm and to his taste.

It would be a good custom, to steep not only wheat but every other grain: in that case, all the weak grains would swim on the top and might be skimmed off. In a dry May, barley which is steeped, will vegetate more equally, and strike root sooner than otherways; which is of great consequence in most kinds of soils and seasons.

OATS.

Of all the grains sown in the Highlands, this is by far the most abundant. It covers more surface every harvest than all the other kinds put together. There are also more varieties of this grain than of any other sown in the county. The most prevalent is what is called the old Scots, or Polish oat. The next kind which is highest in esteem, is the Blainsley, a smaller grain, but somewhat earlier than the former. The red oat, which has got this name from the colour of the husk, and that called the potatoe-oat, are the most profitable in strong soils, and yield more meal from the boll than any other kind; but they require land that has a good body, and is in high order, which disqualify them from becoming general in this county, where a great proportion of the soil is naturally poor, and still more of it badly managed. In one place there occurred an instance of Russian oats, which have the quality of not requiring to be sown before the month of April. There was another instance of what is called Montgomery oats, and also of Essex oats.

It is a custom in all countries, to denominate grains
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after the place from which they are imported into any particular district; even if it should happen to be from the nearest county, or only from a different province of the same county. This custom prevails so much in giving names to oats, that there frequently are several distinctions while there is no real difference. At all events, it is a good practice to change the seed frequently, let the name be what it will, because every kind of grain degenerates in the quality, when it is sown for several years in the same soil.

It is a pleasing presage of the future experiments and efforts to be expected from the most spirited farmers of this county, in order to rouse their countrymen from a lethargic indolence, that they appear so zealous to introduce every kind of grain, which is thought to be suited to the climate, and in any respect preferable to the kinds in common use.

The common class of tenants, who never think of changing the seed of their grain, particularly of the oats, but continue for a succession of years to sow the produce of their own farms, have universally a grey-bearded or black oat, little better than the seed of good rye-grass. This base grain is so universal, that there is no district of the county without great quantities of it. The beards are so long, that almost the same bulk sticks to a man's fingers on the outside, as he holds within his grasp: the grain is so light, that it will not shed on the ground, when ripe, by the most violent wind. The produce is so poor, that it frequently takes two bolls of the grain to make one boll, or eight stones of Dutch weight, of meal.

Such a tendency have all oats to degenerate in this climate, that the very best of these kinds above-mentioned, if sown three years in the same place in the
Highland

Highland districts, will for the most part assume this grey or black appearance, and acquire the base qualities by which that oat is distinguished.

Such a controuling power has Nature over all her productions, both animal and vegetable, that in a short time they are naturalized to the climate, and acquire qualities suited to their situation. It might be easily shewn by an appeal to natural history, that the climate has a great, though a gradual, influence over plants, over beasts, and even over the human species, in all parts of the world. Hence the amazing varieties we behold in the same species. This is *slightly* called by some writers, the sportiveness of Nature, whereas it is plainly the benignity of Providence, in accommodating the different species of the animal and vegetable kingdoms to the situation in which they are placed.

The season of sowing begins on the East Coast in the month of February, if the weather be mild; in many parts of the county it is general in March; but with those who live in high situations, and are attached to old customs, the oats are seldom committed to the soil before April. This obstinate adherence to late sowing is, according to all accounts, wearing off. The good effects of putting the seed into the ground as early as the season will permit, are so evident, in a climate where the harvests are stormy; and the benefit thereby derived by judicious farmers so apparent, that the most old-fashioned tenants are beginning to suspect their own late sowing is a bad practice; and that the practice of those bids fairest for saving the crop, at the latter end of the season, who eagerly catch the very first opportunity which the weather will allow, of sowing the grain.

Oats are such a hardy grain; that no degree of cold to which the climate of Inverness is liable, will do any harm by early sowing, provided the earth be dry when the seed is cast into it; unless wet weather were to succeed the sowing, and a severe frost set in at the very time the germ is bursting the husk, after the land had been thus drenched with rain: and it is to be hoped that these adverse incidents will coincide but seldom. The hazard to be dreaded is little, while the benefit to be derived is great. How great the benefit, to enjoy the most genial part of the summer to bring the crop to full maturity, which enhances the value of the grain; to have a long day and the chance of favourable weather to cut down the crop, before the equinox; and to have it soon collected in good condition, and laid up in safety! while, on the other hand, late sowing occasions the risk of having it exposed in harvest for weeks together in the fields under rotting rains, until every sheaf be grown together.

The summer is so short in this northern latitude, and the season so variable in our insular situation; that the period destined for bringing annual plants to maturity, must upon the whole be considered as very limited. Every wise man should be taught by this imperious consideration, to begin as early as possible to these labours, on which the fruits of the whole year depend; and to prosecute with unremitting industry the means of providing maintenance for himself and others. Were a sloven to reflect, that the misimprovement of a day in the operations of agriculture at this critical season might produce a loss, by which a human being had a chance of being starved in case of a scarcity of bread;—were he to foresee, that in all the affairs of life, especially in the business of a farmer, there

there are precious opportunities, which, being neglected, may never return, he certainly would bestir himself, unless he was willing to be accounted a mere cumberer of the ground, and dead to every sense of duty to himself and to his country. If a farmer shall ever exert his activity, this must be done at the season of sowing, because upon that very much depends the season of reaping.

To fix a precise day for beginning to sow any kind of grain, is perhaps the most absurd of all absurdities. The seasons are so variable and uncertain in our climate, that what might be done in February in one year, can hardly be done in March in another. A wise man will therefore regulate his sowing and all his operations, by the state of the weather, and by the effects he sees the weather have on various things around him. His signs in different respects are the budding or foliation of certain trees, the springing of certain grasses, or other plants, the appearance of certain birds, or the retreat of others to their summer residence. Every gardener forms a calendar of the weather for himself annually, by what he sees coming on in his garden; so should a farmer by a course of experience or by information, distinguish the proper time of performing the particular operations of agriculture; not by having recourse to a precise day of a certain month, but by a reference to certain natural appearances, which indicate the clemency of particular seasons, or the contrary.

Another point in which farmers of experience and observation are not perfectly agreed, is, whether the sowing ought to be thick or thin. Some very sensible men say, that plenty of seed ought to be given to soil in good order; and the richer the ground, the more able it is to produce a plentiful increase; whereas poor

land will yield but a small return, whatever quantity of seed is thrown into it. This reasoning is more specious than just. Yet to be dogmatical in deciding this or any other question, is not my intention. While respect to the directions of the Honorable Board induces me to give an opinion, the deference due to the public, prevents my giving that opinion with a dictatorial air; being conscious that every opinion of mine is to be reviewed by persons more adequate to the decision of dubious points than myself. In rich soil, or (which is nearly the same thing in the present point of view), in land that is in high order, it is always found, that the seeds stock when not sown too closely together, and that one grain sends up several stalks; that the ears have more air and room to come to full maturity; that the grain is plump and heavy; and that the crop in these circumstances has the best chance not to lodge and rot; which facts are all in favour of sowing such land *thin*. Whereas on the other hand, if poor land be sown thin, the weeds and couch-grass will overspread the surface, and occupy the place of corn.

The reaping season depends in a great measure on the season of sowing. While those farmers, who seize the earliest opportunity of committing the seed to the ground, can reap in the latter end of August or early in September; others, who are indolent in spring, are thrown some weeks later in harvesting their crop: and when the latter end of autumn is unfavourable, the crop is not wholly collected before the approach of winter. By my notes it appears, that the harvest is general in this county during the month of September, and for the most part finished in October.

The reapers are either men or women, as they
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can be got; in some cases they are hired by the day; but commonly for the reaping season. In this county the grain is cut low and clean, which laudable practice was perhaps taught by necessity, and still must continue, wherever the old style of farming remains. The summer grass in most places can support more cattle than the winter provender: hence the eagerness with which they collect all the straw and hay in their power, to keep their cows and horses from dying of want.

The corns are set up to dry in the same manner as in other countries. The description of a shock (provincially a stook) and of a common stack, is altogether unnecessary. When the harvest is very unfavourable, the Highlanders in general have a custom of setting up their corn, particularly their oats, in single sheaves, called gaits. This is done by tying the sheaf loosely near the top; then by opening out the straw in a conical form; and lastly, by setting the sheaf on its butt end. The season is so rainy in most places of the Highlands of Inverness-shire, that by this method alone of winning their grain, the inhabitants find it practicable to save the crop; and even if the shocks have stood long under rain, the sheaves must be separated, and made into gaits before they can be safely put into a stack or barn.

FLAX.

Although there is no other plant cultivated by the Scottish farmers, which will ultimately make a greater return than flax, yet the culture of it is very limited in the county of Inverness. The shortness of the sum-

mer, the unsettled nature of the weather, and the variety of the successive attentions which this plant requires, deter the inhabitants from attempting its cultivation, seeing that all their care and all their labour is occupied, at that critical season, in sowing their corns. The Highlands of Scotland are never to be enriched by the manufacture of flax raised in the country. Their source of wealth, in this line, is the spinning of wool; and to this branch of their national manufacture, which might be rendered so lucrative, every man who has the opportunity, ought to advise the inhabitants; and every man who has it in his power, especially every patriotic landlord, ought to solicit, ought to urge, ought to encourage them to begin.

After travelling a great many miles, and making the most minute inquiry in the course of this Survey, relative to the cultivation of flax, hardly one instance of its cultivation occurred in all the districts on the West Coast, in Lochaber, Strathlochy, Glenspian, the sides of Locharkaig or Lochgarry, at Fort Augustus, Glenmoriston, both sides of Loch Ness, Strath-eric, and several other large tracts of country.

In Urquhart the answer was, very little lint. In the Aird the culture of it is general; but only in small patches, which every little farmer sows for the use of his own family. In the neighbourhood of the county-town, very little is raised; neither have the people a mill to dress the little that is cultivated. Ardersier is the only place where the quantity is worthy of notice; which is the farm of Mr. Macpherson, a gentleman who pays considerable attention to this plant, and indeed to every part of good husbandry suited to that climate. The returns from flax on his farm shall be taken

taken notice of under another article. In exploring Strathnairn, Strathdearn, and Strathspey, very little occurred.

In Badenoch, though a higher country than the last of these, there was more flax sown. The climate here is equally unpropitious as in many of the other districts, but the soil is well suited for the growth of lint, as may be seen from what has been said in the chapter on soils. Two mills for dressing flax have been lately built in that country; the one on the Duke of Gordon's property; the other on that of Colonel Macpherson of Cluny. The people of every other district where lint is raised, dress it with the hand. This process is simple but tedious. After it is has been duly watered and dried, the sheaves are formed of the thickness of a man's leg, and beat with mallets on a smooth stone, to separate the reed from the rind. Then it is separated into handfuls, such as a person can easily grasp; and with a wooden instrument, made in the form of a hedge-bill or large knife, in the right hand, and holding the lint in the left, over the end of a small perpendicular board set firmly in a sole, which is held down by the foot, and about three feet high, the lint is scutched or whipped, with the wooden instrument, turning one end of the lint after another to the stroke, and turning the inside out, as appears necessary, until the rind be completely separated.

The great objection in Badenoch to the culture of flax is, that before the crop is ripe, the season is so far spent that the water has become too cold to have it watered in time for the future operations in preparing it for the mill. In answer to this, they were then advised (and for the information of the district at large, or others in the same circumstances, it is here repeated)

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to stack up their flax in the same way as is done with corn, whenever it is fit for being put together, in the latter end of the season it grew, and to water it early the ensuing summer; which would not only remove the obstacle complained of, but allow the growers of that plant more of their time for executing the other parts of their harvest work, in that precarious climate, and afford the most nutritious food for milch cows in spring, from the husks and seed.

The signs by which good lintseed may be distinguished, the marks of the crop being ripe, of its being fully watered, and when it ought to be taken up from the field where it is spread, and some other matters relative to this plant, are taken down minutely in the Survey of the county of Perth: but the culture of it in the county of Inverness is so limited, that it seems at present unnecessary to be more particular.

The Board of Trustees for Encouraging Fisheries and Manufactures give in that country a premium of 20s. the acre, provided fifteen stones of clean lint be raised on that extent of land. It is thought that the stimulus would be more powerful, if the premiums were progressive to every quantity more than fifteen stones from the acre.

POTATOES.

This useful root is extensively cultivated, and the management of it is well understood, by all the inhabitants of this county. Their soil, being in general a free light mould, is calculated, when diligently attended to and plentifully manured, to make the most ample returns. By the quantity which appeared in the fields in the autumn of 1804, and the care with which

which the potatoes had been trained to such a degree of luxuriance, there is little doubt that this plant alone, dressed in the various ways used in that country, would support all the inhabitants at least during eight months in the year, with very little assistance from grain.

In every district, the potatoes, when put into stubble land, are drilled with the plough, both in planting and cleaning, wherever a plough can go. Where new land is to be brought into cultivation, or where the surface is broken with rocks and large stones, or the ground wet, they have recourse to the spade, and plant the potatoes in what are called lazy-beds.

Every householder, from the highest to the lowest orders of the people, has potatoes for his family; and the industry with which the poorest of them make up their little composts, waiting the season of planting their potatoes, is pleasant to behold. On the West Coast, the sea-ware is collected with the most careful industry; and in the inland districts, ferns and other weeds are used for that purpose.

The curl is a disease hardly known in this county; which leads to an opinion, that it is occasioned by the nature of the soil in those countries where it prevails.

Various kinds of eating potatoes are cultivated; but of all these, the kidney seems to be in highest estimation, by reason of its being whiter, more free, and farinaceous, than any other species. Yams for cattle are also planted by the most experienced improvers. The returns of drilled potatoes, well certified, are so great after the boll or by the acre, that if these were taken down in this Report, it would only afford a pretence of cavil, to persons, who are conscious that they
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are unsuccessful in reaping such great returns themselves.

The early frosts frequently hurt both potatoes and flax, and all the corn crops in this high latitude and rainy climate, which is so liable to mildews.

The haulm of this plant is extremely delicate, and therefore liable to be injured by these causes, in which case the growth of the root is retarded; against which injury there is no remedy: and if the frost shall penetrate the soil before the potatoes are dug up, or reach them when pitted in the fields, they assume a mouldy appearance, as if they were overspread with hoar frost. In this event nothing will recover them but immersion for an hour in cold water. If, however, they had lain so long under the frost as to become soft to the touch, they are rendered entirely useless. The readiness with which frost injures this root, ought to teach farmers to guard with the strictest vigilance against the danger, and to save their potatoes, even at the risk of leaving their corns a little longer in the fields, which are not so easily injured by the same cause.

The people of this county are duly sensible of the value of this precious root. A gentleman of the best information, and of the most unquestionable veracity, said, that so far as he knew, the old potatoes were not all consumed before the new came in season. Under no other crop known in this country, will the produce of any given extent of land afford nourishment for so many months. It grows in the poorest soil, and is easily and readily rendered fit for the table. Its value to the Highlands of Scotland, as an article of food, is beyond all calculation; yet it may be made still more valuable, as a mean of reclaiming improvable land, which at present lies waste in every district comprehended

tended within the bounds of this Survey. None but the poor have hitherto taken the trouble of planting potatoes in ground which had never been cultivated; and no doubt these do so only from necessity; but when persons of more substance, particularly proprietors, shall turn their attention in good earnest to this matter, they can in no other way reclaim more land at the same expense. Were these to leave under sown grass some of the fine fields where they have hitherto drilled their potatoes, and lay the dung on a piece of waste land, and hire the needy, who could easily be procured, to plant with the spade, the produce of the first year would pay all the labour, and a large portion of their property would in due time be rendered fit for other crops, besides giving work and wages to poor people. This mode is the cheapest, to persons who are such accurate calculators, or so economical, as to wish for an immediate return for their money; yet it is to be hoped that not a few will prefer trenching their ground at the proper depth, to let the plough pass with ease, after having thrown all the larger field stones on the surface, in which situation they are ready to be carried off, at the intervals to be spared from more pressing work, or during the winter, when little or nothing else can be done. Land planted with potatoes, after being trenched in this manner, is completely reclaimed at once; and all the future crops may be fairly stated on the credit side of the account.

The manner in which potatoes may be pitted with greatest safety; the best mode of planting them in drills or in beds; the process by which they are raised from the small seedlings in the plumbs; their history; how they may be made into the finest starch; distilled into a strong spirit, or baked into bread; it appears

to be unnecessary to enlarge upon:—these and some other remarks are taken down in the Survey of Perthshire. Were their usefulness, as a mean of subjecting to the operations of agriculture, land, which at present is of little value, equally well understood, and as steadily pursued, as their benefit is felt in maintaining the inhabitants, and affording a wholesome substitute for bread corn; all their other qualities would soon be universally known.

TURNIPS.

The sowing of turnips is not near so frequent as the planting of potatoes. Necessity or self-preservation, the most powerful of all motives, dictated the cultivation of the latter; whereas convenience, in a great measure, suggested the utility of the former. There is hardly a garden where turnips are not to be seen in the season; but their appearance in the fields are by no means general. Every person, who wishes to be thought an improver of land, sows less or more of field turnips. Upon the East Coast of the county, from the Aird to Fort George, the fields of turnips were of considerable extent, and almost on every farm, and well dressed, during my tour in that country. Gortlee and Faraline were the only places in Stratherrick where any quantity had been sown. They were in the highest perfection at Cantray. In Strathispey and in Urquhart, the culture of turnips is well understood in some places; and also in Badenoch: but in fewer places upon the West Coast and in Lochaber. Yet from the attention paid to this root, and the knowledge discovered in the cultivation of it in particular places of every district, there is little reason to doubt, that it will

will soon find its way into every farm where husbandry is carried on with any degree of professional knowledge: the examples set before the county at large are so many and so proper, that they must be followed: the benefit of the root is so great, both as a cleaning crop for the ground and in affording provender for their cattle, that the interest of the common tenantry must lead them in due time to adopt it; but a regard to brevity prevents my doing the justice which is due, to those spirited improvers, who set these examples before their countrymen. Their land seems to have been well pulverized by frequent ploughings, previous to the sowing season, which for the common kinds is about the middle of June, or earlier; but the season for sowing the Swedish is April, because it takes a long time to arrive at maturity.

The fly commits his depredations in these countries no less than in others. The only remedy against this foe hitherto practised by one gentleman near Fort George, is to continue to sow successive crops, to replace what had been destroyed. But if the seed from the produce of two different years were intimately mixed together, the young seed, by springing first, would satisfy the fly, which generally moves off, when he has once gone over a field, and the old seed, by taking more time below the ground, might not probably rise until the robber had taken his departure in quest of more prey. If the young seed were steeped in water before its mixture with the old, the difference of time betwixt their springing would be greater. In the inland parts of the county the fly seldom appears: his ravages are more frequent upon the East Coast. I never saw the fly commit his ravages in a field of turnips, where the dung had been ploughed in with the rousing

rousing furrow given to the land the latter end of the preceding autumn; nor where lime was spread on the surface of the drills, and harrowed in with the seed. The last of these precautions against the fly, is always adopted in my own practice.

The fly does no harm after the plant sets out its rough leaves: the smooth leaf of the germ seems to be the sweetest, and to partake most of the nature of the parent root, from which the seed is formed, which is highly saccharine; but the caterpillars, snails, and grubs of various colours, infest the young turnips for a considerable time after the fly is gone. The caterpillar is an open enemy, makes his attacks in broad day light, and meddles with nothing except the leaves. The other two burrow below ground, and seldom come forth but in the dark. They cut the roots both of grass and corn, and greens and turnips, just below the surface, where these plants are most succulent. A number of hungry poultry turned into a field, will soon dispatch the host of caterpillars; but the others are more sly, and generally retire on the approach of day into their holes, which are seen in the surface of the ground. These have also been destroyed by rolling the field during the night.

Not only the common field turnips, but the Swedish turnip, ought to be cultivated in the county of Inverness. In many parts of this county, the winters are so severe, that the red and green topt turnip can seldom be proof against the weather, so as to be in a sound state for spring food to the cattle, during the period of their greatest necessity: the alternate changes of frost and thaw, of sun and rain, will soon ruin these completely. The propriety therefore is apparent, and I venture to recommend most earnestly to the inhabitants,

tants to carry on the cultivation of the Swedish along with the other species of turnips. The last of these may in this case be consumed during the winter months; which is the proper time to use them, for a reason already given; and the first, which are so hardy as to withstand the effects of the most intense frost, will succeed as an excellent spring food; by which means the cattle will have plenty of juicy nourishment in aid of their dry provender, from the time of the failure of the grass in autumn, till it begin to rise on the approach of summer. Then, but not till then, will plenty smile on the face of a country in this most trying season, when cattle of all descriptions used to die in hundreds for want of sustenance, before the new grass appeared. Although the Swedish be not so bulky as the other kind, yet by containing more nourishment in proportion to its size in the bulb, it is very valuable in this respect, besides its uncommon hardiness. At whatever time, the turnip husbandry shall arrive at the perfection in this county, which the circumstances of the inhabitants so evidently require, the common turnips may be sown early in June, that they may be the earlier ready to be taken up, for reasons which shall presently be mentioned.

In every experiment to improve their system of agriculture, made by the gentlemen in the interior of this county, and in every suggestion which I venture to make, in aid of their efforts, regard ought to be had to the shortness of their summers, to the consequent length of their winters, and the general tardiness of Nature, in bringing the fruits of the earth to maturity, in time to be saved before the winter set in to baffle their industry, and blast the labours of the whole year. To guard against this inconvenience so far as human

foresight can avail, the sowing of grain ought to commence with the first appearance of spring, as hath been urged above; and for the same reason, the sowing of turnips ought to be earlier, than the gentlemen of these districts see recommended in books, written either by persons inhabiting the genial soil, and basking under the powerful sun, of South Britain, or even by those in the southern counties of their own kingdom. The cautions given in these books against early sowing in the South, are suggested by the dread of turnips springing too early, and running to seed in the autumn or ensuing spring, if they be sown early in the preceding summer. There is little dread of this error being fallen into, and of this consequence following, in the greatest part of Inverness-shire. The hazard is much greater, of the inhabitants being so circumstanced, as to lose their common turnips, or compelled to carry them off the ground, before they be fully ripe.

The expense of purchasing turnip seed ought not to be a bar against the cultivation of such a valuable plant; yet if a little attention were bestowed, every farmer might save the seed of his own turnips. This is easily done.—Chuse fewer or more of the largest and best shaped turnips in your field, when fully grown; cut off the leaves an inch above the crown of the plant; shake the earth away carefully; lay them up in a dry place, free of every kind of dampness; plant them in spring, as you do cabbages or common greens for seed: while the seed is ripening beware of birds. Thus every farmer may easily have the seed perfectly fresh, and of such a size, figure and kind, as he approves of. The globe, or white turnip, is the largest, but the most delicate. The red and green
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topt the next in size; the yellow more hardy than any of these; but the Swedish is the hardiest of all.

If cabbages or greens, and turnips, are planted for seed, near one another, they are said to propagate several plants of a mixed species, which are called *mules*, being neither real turnips nor real cabbages, because the males of the one impregnate the female plants of the latter.

It is said that a species of yellow turnip has been cultivated at the borders between North and South Britain, which rivals the common turnips in bulk, and the Swedish in hardiness. If this be a fact, that kind will no doubt be eagerly sought after and extensively cultivated. A few yellow plants may occur in every field: if the largest of these are selected for seed, and sown, and the best of the next crop also preserved for propagation, any person may bring this species by repeated trials and selections, to the full test of complete experiment. Were it possible to introduce yellow turnips of a profitable bulk, as an intermediate supply of winter food, between the common kind and the Swedish, it is to be hoped, that the Highlands of Scotland would never have cause to complain of scarcity in the article of food for their cattle, during the winter and spring.

At all events, it is very practicable to store up the common turnips on the approach of frost, so as to preserve them in good order, through the whole of winter and part of spring. In raising turnips for this purpose, they ought to be turned round with the hand in the earth, by a smart wrench, before they are pulled up, which breaks off all the lateral fibres from the bulb. When they are pulled, the tap-root is cut away with a knife, and the leaves in like manner.

They are then to be carried to a dry place, near the cow-house or straw-yard, and piled up in a prismatic form, resembling the roof of a house, thatched very carefully to exclude the rain, and roped over to prevent the effects of violent wind. With these precautions, any kind may be preserved in good condition, until the season of the year produce a tendency in all living plants to vegetate.

In forming a judgment of the comparative value or quantity of nourishment, afforded by the different kinds of turnips, independent of bulk, the surest criterion is to observe what kind is most frequently eaten by the hares. They are sagacious tasters, and unerring judges in this matter. When the cultivation of this plant is carried the length it ought, and which is earnestly to be wished, for the benefit of the Highlands; no doubt, some turnips, especially the Swedish, may remain unconsumed when the spring is far advanced. In this event they will begin to shoot, which must by all means be checked, to prevent their becoming stringy and useless. Let them be all pulled, the earth carefully shaken off, and then left upon the ground until they are consumed.

One of the most powerful objections urged by the inhabitants, against the general culture of this plant in the higher parts of the county, is the want of enclosures to defend them from the cattle, in the latter end of autumn, when their stock descends from the mountains. My second reason for recommending the early sowing of turnips arises from this objection, and is intended as an answer to it. I now speak again to you, ye gentlemen farmers of Inverness-shire, whom I know to be men of the soundest understanding.—Judge ye what I say—Sow your turnips in time to arrive

arrive at their full maturity by Michaelmas; and if you do so, never mind your want of enclosures. Proprietors may, and it is to be hoped will, make enclosures on their own domestic farms; but if they will not enclose and subdivide your farms, neither you nor I can help it. We may reproach them, no doubt; we may tell them that they are so far blind to their own emolument; but we cannot compel landlords to enclose. If your turnips are ready by the time your cattle shew a disposition to creep down and enjoy the warmth of the vallies, yoke all your horses and collect your turnips in the manner pointed out, or put them up into a shade or barn made near your house, on purpose to receive them. But beware of putting too many in large heaps above one another. The danger is, that they will become too warm, which would encourage vegetation in the heap. This is the most secure mode of preserving these roots, in the southern counties of the island, where the land is fully enclosed, and is much preferred to lodging them in pits, or to piling them up in the corner of a field. How much more ought it to be resorted to, in a country where the winter is uncommonly severe, and where the land is not enclosed!

In the manuscript sent to me from London, mention is made of one instance in the Ayr, of a gentleman having fed his horses on common turnips and a little straw through the winter, without hay or oats; and that they were in high order and good spirits the whole season. The Swedish turnip is well known to be much relished by horses, and a hearty food; and no ordinary provender can be better for cows and sheep than the common turnip, whether they be fed for the butcher or for milk.

Some nice palates perceive the taste of turnips in the milk of cows fed in this manner. When there is a large dairy, which is likely to be the case where the objection is made, the milch cows may be fed in part or wholly with other provender than turnips; and the roots given to the dry cattle: or the natural relish of the milk may be restored, by pouring in a few drops of the solution of nitre.

Few counties in Scotland have a soil better calculated for raising turnips and potatoes of all kinds than this county; and few counties stand in more need of great quantities of both. Very extensive tracts of low moor, having a thin stratum of moss on a subsoil of gravel, are lying in a state of nature, not more productive than they were ten centuries ago, dispersed throughout every district, and some of these extending for miles in a continued stretch; which, if they were wrought, would be a very fit soil for turnips; sufficient to maintain more cows in winter than all the dry provender, in a great part of the country around them. There are also large tracts of higher moor, and of a soil consisting of a stronger body, which should be cultivated in the first instance with the spade, and planted with potatoes, sufficient to maintain several thousands of people, and prevent the importation of meal at the port of Fort William, which is said to amount annually to 4000 bolls.

When the spirit for improving the wastes, which has already begun to shew itself in different parts of the county, shall be disseminated over every corner, and become general, there is little doubt, from the energy natural to Highlanders, but the quantity of turnips will support a great proportion of the cattle, and

and that the wholesome farinaceous root, the potatoe, which is now such a blessing, will be extended still farther.

Nothing farther appears needful to be said on this important subject, except that if turnips are overtaken by severe frost in the open air, it is very unsafe to give them to cattle in that state, being no better than a lump of ice, until the frost be extracted; which is effectually done by immersion for an hour or two, according to their size, in cold water.

RYE.

This grain is cultivated in few districts of the county, and even in these it is seldom sown by itself. The lower ranks of the tenantry sow a mixture of oats and rye in the ends of the ridges nearest their dwelling-houses, to preserve the grain from the poultry; owing to a notion they have, that the common fowls will not eat rye. At any rate, the rye is so light a grain, and the straw so strong, that it is seldom laid with the storm; and it grows so tall, that common fowls cannot reach it. These qualities of the grain have probably given rise to the opinion that fowls will not, because they cannot, destroy rye. In other parts of the world, rye is frequently baked in an oven, and makes a strong nutritive bread; but in the Highlands of Scotland, it is for the most part made into a pudding, and used as spoon food. No rye is sown by any gentleman or farmer, who carries on a regular system of agriculture, by regular changes in cropping his land. The poor alone who have been bred in the old school, and adhere to the mode of farming practised by their great grandfathers, continue to sow rye; and it is

alleged, that they sow it in some instances, when they despair of the land making any return even in oats.

SECT. V.—CROPS NOT COMMONLY CULTIVATED.

FROM what the sensible part of the community, in the county under review, have done within these few years, to introduce a better style of farming among their neighbours, and their success in cultivating the sown grasses, and in drilling turnips and potatoes, there is every reason to expect, that matters will not stop in the present stage of improvement. The ardour for meliorating the condition of the land, in order to increase its fertility; the examples set before the country in cultivating plants, which few of their fathers had ever seen, and of which they probably had never heard, will cause a spirited emulation in every enterprising man, who has such bright patterns of industry every day before his eyes. Who would wish to be left behind in the way of doing good? Who would wish to be the last man in promoting the benefit of his country, while at the same time he promotes his own? It is incumbent on the people of property and of capital to lead the way. They owe this duty to their country; they owe it to the bounty of Providence, by the rank they are destined to hold in society, by means of their understanding, their wealth, and their influence. And if you lead the way, as you ought to do, in this great national concern, the most intelligent of the common tenantry will fall into the second rank of improvers; and in due time, the most tardy and indolent, were it only for the shame of being justly chargeable

chargeable with incorrigible slothfulness, will come forward, though in the rear. Man is most assuredly an imitative being. We learn many of our accomplishments, both of body and mind, by imitation. We learn all the arts of life from the same principle; and why should we not learn the business of agriculture in the same manner? It cannot—it must not be a solitary exception from this general principle of human nature.

What a vast advantage is it to this county, that in every district, there are some men eminent for their knowledge of agriculture, who shine like lights in the country around them! These characters are not collected into one place; but in the course of Providence, they are, for the good of this widely extended county, set down in different straths and in different glens. While they, whose eyes are directed to you, are studying, and enlightened, and taught by the example you have already set before them, surely it becomes you not to stop short, or to think that you have done enough, or imagine that no more remains to be done. You know, better than any man can tell you, that there is no end of improving. One step leads to another; and he is accounted the most eminent in this line of life, who hath made the greatest progress in what is infinitely progressive. Are there not many acres of waste land in your country? Are there not some useful plants, the culture of which you have not attempted?—Yes, many thousands of the former, and a considerable variety of the latter.

Carrots and parsnips have not been announced, as plants introduced into your country, and propagated with the industry which they deserve. In the Aird
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it was said, that such gentlemen as tried to raise carrots, found them to be a profitable crop. At Castle Grant they were to be tried the first spring after this Survey took place. They require a deep, mellow, free soil, and when properly attended to in the drills, make great returns, and are a very rich food for all animals.

Root of Scarcity, which promised such great benefit, on its first importation into this country from the shores of the Baltic, had been tried at Gortlee in Strathcric, by Mr. Fraser; but was discontinued.

Rape-seed was not met with in all the county. This being a most valuable plant, ought to be introduced into a climate to which it is so well adapted, and where there is so much need for spring food for sheep. The rape is so hardy, as to be proof against the most intense frost; and although, during winter, it be eaten down to the very stumps by cattle, or all the branches and leaves cut off by the hand, yet in spring it will send forth new shoots more numerous than the former, which may be used as the first crop, or allowed to run to seed during the summer, and sold to advantage at the mills, which extract the oil from the seed of this plant, and from lintseed. As an additional recommendation in favour of rape-seed, and an inducement to the improvers of the county to introduce so useful a plant, it will grow on the coarse and mossy land of Inverness-shire, when reduced by two or three ploughings and harrowings to some degree of tilth.

Tares.—Instances have occurred in some places, of
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the culture of tares in this country; but this being a plant which would both agree with the climate, and prove an excellent food for horses and sheep, the gentlemen of the county ought to try its cultivation more extensively. If tares be sown in the autumn, they will come in aid of the rape and Swedish turnips during the spring months, for the support of sheep, and for preserving them in good condition against the lambing time, which, to that valuable animal, is by far the most critical season of the whole year. Every store-master knows how necessary it is for him to use all the means in his power, to enable his flock to meet this crisis with an assurance that they shall not only have strength to drop their lambs with safety, but have plenty of milk to suckle them. Spring tares will be an excellent food for horses between the first and second cutting of the clover, when a scorching drought has retarded the growth of the aftermath; or if not consumed in this way, no provender can be better for horses than tares, when winn and laid up for winter-food. No food produces richer milk, nor higher flavoured butter, than tares; when they are well podded, pigs thrive exceedingly upon them. With those who can afford it (and the expense is well repaid by the profit), tares grow so luxuriantly, that they prove an excellent manure, when ploughed down in their highest degree of succulence, to prepare the land for a future crop of grain. In short, this plant stands the winter well, grows to a great length, is always green, affords much nourishment, and is well suited to the climate of Inverness-shire, where the inhabitants often suffer severely by the scarcity of spring food of all kinds.

Cabbages, lucern, sainfoin, burnet, buck-wheat, which did not occur in the course of this Survey, and which

which do not seem so necessary to be recommended for being cultivated in the open fields, at least in the present state of the farming of the country, shall be passed over without any further notice. Rhubarb, tobacco, liquorice, madder, and chicory, are rather adapted for horticulture, and no doubt will make their appearance in this shire, when the value of the more useful field plants has been fully established.

I have undoubted testimony, that hops had been propagated at Gortlee, and used by the family; but as no other instance occurred in my whole tour, the climate of this country seems to be unfavourable to that plant.

SECT. VI.—HARVESTING, &c.

THE occasional remarks which have been made relative to harvesting, in treating of the different kinds of grain, supersede the necessity of dwelling long on that article, in this place. In every country where the farmers are enterprising, that spirit of activity successively pervades the operations of the whole year; but wherever they are slothful, even the most critical circumstances, and the eventful prospect of the severest loss, will not rouse them to shake off their indolence. To all farmers, the harvest in this climate is the most trying season, because upon the use which is made of those intervals of fair weather that occur, depends generally the loss or preservation of the crop, those precious fruits of all their preceding labours. Nothing therefore can be so demonstrative of the incurable laziness of any farmer, as his neglecting to exert every nerve to manage his harvest-work successfully.

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Very little attention is paid to weeding the corns. At Gortlee, an instrument is used for this purpose, made in the shape of a small knife, crooked at the point, with a wooden handle.

Early sowing, as hath been mentioned above, will make early reaping; which therefore cannot be too much pressed on the inhabitants of this county, where the weather is so precarious.—All the culmiferous crops ought to be cut down, when the ear and straw assume a bright golden hue, even before all the green streaks have disappeared from the stem. This deep yellow is the state in which the corns should be reaped, before a blanched whiteness takes place. In that situation the straw has lost less of its virtues, the grain has acquired its full maturity, and the danger of shaking is prevented. The remark of an old sensible farmer is worthy of record: he would never lose the captain, waiting for the soldier; meaning, that the shaking down of the head grains in the crown of the ear, which were first ripe, ought not to be endangered, by waiting for the greenish inferior grains at the bottom.

Over all the county, the reapers cut low and clean, which is a laudable practice; because, let the straw be ever so coarse, what is not eaten as provender, will serve for litter, and increase the quantity of dung. In some of the western districts, the shocks are made of thirteen sheaves, having ten standing on the ground in the common form, and three on the top, of which the middle one is split, and the other two cover the extremities at both ends. In other districts, towards the eastern extremity of the county, on the coast-side, the shocks are sometimes left uncovered. The weather must be better than ordinary, when this mode of harvesting

vesting is safe. The use of gails in a watery harvest is almost universal.

No other mode of setting up corn after the reapers, or of recovering it, after it has been damaged in the shock, is equal to this, in a rainy climate and backward autumn; and the reluctance of the better sort of tenantry to save their grain in this manner, can only arise from the contumacious neglect with which many things are treated, that are practised by the poor. The corns are winn in half the time required by the common method. The degree of stupidity said to be practised in some cases, of leaving the sheaves unbound in the field, for some days after the crop is cut down, is inconceivable. The chance is, that these corns may be lost for ever, or at least greatly damaged, when a continuance of rainy weather sets in; at any rate, the dew of night occasions dampness. If the quantity of weeds be great, which may happen in ground that is never fallowed nor allowed to rest, and gets dug every third year, it would be far better management, to hold the grain by the ear and shake out the weeds, tie up the grain in sheaves, and winn the weeds like hay. The most frequent form of shocks is in twelve sheaves, which is so common over all the Kingdom, that it needs not to be described.

About the equinox, boisterous winds attended with heavy rains, very frequently overturn both gails and shocks. When this happens, a careful farmer no sooner sees his grain blown down, than he begins to set it up, and continues to do so, until the blast is over and the weather settled. It is then he reaps the benefit of his industry. So soon almost as the rain ceases to fall, the corns which were kept standing are
ready

ready to be brought home; whereas the sheaves, which were allowed to lie scattered on the field, are like a wreck drenched in water, and require several fair days to dry them.

If the weather be calm at this season of the year, the nights are generally clear and frosty, with a sharp air of north wind. No sooner does the sun rise than the hemisphere is overcast; a thick heavy fog, rather than detached clouds, covers the general face of the atmosphere, which the country people call "the frost fleeing into the air." A drizzling rain ensues, and the day continues to be rainy till night; at which time the frost regains the ascendancy as formerly. In these circumstances the industrious farmer gets the start of his slothful neighbour, as he does upon all occasions. He sets all his hands to work, whenever the keen north air sets in at night, to sort his gails, to set them properly to the wind, to select the driest; and, by this management, he has probably a stack or two made by the time his neighbour is getting out of bed. This is no ideal theory. I have known it practised by several farmers eager to save their grain, "*quorum magna pars fui.*"

Mankind are disposed to complain of such weather, without reflecting that these autumnal frosts, at night, are the effect of our northern latitude, and of the distance of the sun in the southern hemisphere; and that the small rain, which falls down next day, is owing to the benignity of the all-bounteous Governor of Nature, who sends rain to restore the circulation of the vegetative fluids in the plants, by dissolving the frost, which would otherways arrest these fluids, and prevent the unripe corn from arriving at full maturity. By the time
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the crop is reaped in these latitudes, this antidote against the baneful effects of autumnal frost is discontinued.

The corn-stacks are built in Strathnairn and elsewhere, round a frame of wood set up firmly in a conical figure, the tops of the rafters or boards resting against each other, and reaching a little above the eaves. In addition to this frame, a door (provincially a logie) is formed upon the side from which the wind commonly blows, and to secure the admission of more air, a lateral vent; or small opening, is perhaps made in the body, a little below the point of this wooden frame, which is called in the Low Country "a fause house*," and in the Highlands, "the windy house." Where wood is scarce, the same effect may nearly be produced, without an upright frame of timber, by filling a sack with straw or hay, and fixing a rope to the mouth. This sack is set down adjoining the logie, and in the centre of the space on which the stack is to be built; and as the building advances, the sack is gradually pulled up, so far as is thought necessary; by which means a future draught of air is admitted. These precautions are used when the victual is damp, and the stack to be built on the ground. But where the preservation of grain is duly attended to, the stacks are built upon stathels, which are six or eight low pillars of stone or timber, fixed in the ground in the shape of the bottom of a stack, and two or three feet high. Timbers are laid on these, both in a circuitous and diagonal direction, so closely, that no sheaves can reach the ground. If the pillars be made of stone, and formed

* For false of uninhabited house.—*Burns' Poems.*

properly

properly above, no vermin can get access into the stack. The only precaution farther, which is used for the preservation of the grain, is to make stacks narrow, unless the corns be perfectly dry and well seasoned.

CHAP. VIII.

GRASS.

SUITED to the condition of the various species of creatures which inhabit the globe, the provision made for their support is of different kinds. Were nothing to be found for the sustenance of life except grain, which falls away once a year, what would become of all browsing animals, when the crop is gone? Were nothing to be found but grass, all the granivorous tribes must perish. These are the two great sources of animal food: but besides these, the carnivorous creatures live upon other animals, which are weaker than themselves.

The rank, which man holds in the scale of existence, and the dominion with which he is invested over all the irrational tribes, give him the advantage of reaping all the benefit not only of their obsequiousness to his will, but the benefit of their diligence in preserving their own lives. Although he cannot himself consume grass, he derives part of his subsistence from the flesh of these creatures, which by living upon grass, convert the plants themselves into human food. Without this economy of Providence, and this mode of enlarging the provision for human food, man must have been confined for his subsistence entirely to the seed of plants; and the limited quantity of this supply must have in a short time reduced mankind, even in

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an improved country, to the most deplorable situation: What then could have become of man, in an uncultivated waste country! How absurd, therefore, the doctrine of those philosophers, who taught the unlawfulness of living upon animal food; since in a savage state, before the cultivation of grain, or the successful employment of industry, men could have no other. From the summits of the highest mountains, from the shelves of the most rugged rocks, and other places which to him are inaccessible, food is collected for the maintenance of man, with a diligence and perseverance which he could not employ. The minutest plant and the most unseemly shrub, are converted to his use by these ministering animals, which are all the while obeying the instincts implanted in them for their own preservation; without the least consciousness, that this incessant labour of theirs is ultimately intended by the all-wise Creator for his favourite, man.

SECT. I.—MEADOWS AND PASTURES.

THIS county, like all other parts of the Highlands of Scotland, has a great proportion of the surface divided betwixt high mountains and flat grass-lands in the bottom of the vallies. Tracts of ground, which have a gentle declination, and are adapted to the operations of agriculture, are comparatively very few. The flats in the vallies by the margins of rivers, and at the heads of lakes, are for the most part preserved for hay. This is the practice of all the small tenants who have no other meadow ground; but in these districts,

where agriculture is understood, other land is employed to carry hay, besides bogs.

On all the sea coast both east and west, the bounds of marshy ground are very small; therefore the natural bog-hay of these districts is of little or no account. Along the Western Shore, indeed, except in Glenelg, at the farms of Boradel and Keppach in Arasaig, and a few more, the surface is so much broken, and the arable ground so confined, that the farmers cannot spare land for meadow, having almost the whole constantly in tillage. The surface is not so rugged along the firths of Beaully and Murray, where more ground is subjected to the plough, and the farmers are enabled to spare a greater proportion of their arable land for sown grass. Neither Glenspian nor Strathnairn abound in low moist land fit for this kind of meadow.

In the districts of Inverlochy, Glenmoriston, Corrimony, Stratheric, Strathspey by the river side, and Strathdearn, there is more of natural meadow land than on either coast; but no part of the county abounds so much in fields naturally qualified for this kind of crop as Badenoch and Strathglas. The meadow land in the former will become less, by the spirited exertions made to bank off the river Spey, and bring these extensive links of rich soil into cultivation; but in the latter, the meadows of this description will increase by the regorging of the Glas, except it be prevented. The flats in the last-mentioned countries are, for the most part, a dead level, producing the most excellent bog-hay that can be cut down. The formation of ground by means of the different currents of water, has been treated of at some length, in the Chapter on the different kinds of soil; and shall not be resumed

in this place. Whatever be the natural qualities of land, if it be overcharged with moisture, or so liable to frequent inundations, as not to be fit for carrying crops of grain, there is no way in which it can be used, except in pasture or meadow ground. These meadows are more or less fertile, in proportion to the time they have occasionally been inundated. Where the water goes soon off, after having deposited a fertilizing sediment, the meadows are remarkably rich; but where the water remains long, or does not retire completely, the land becomes sour, and carries very coarse grass, mixed with rushes, sprits, and frequently with aller, and a kind of black ozier. These aquatics springing up in a flat of meadow, are a sure sign that the land has more moisture than does it good; and that it ought to be drained, where that is possible. In many cases, this improvement is impracticable. The partial floods accumulate matter upon the nearest banks, while the back grounds acquire no addition of soil. This circumstance, by occurring frequently, will raise a mound on that side next the inundating stream, which mound runs along in the tract of its course, and becomes so much elevated above the land behind it, that the water is dammed back on such land, whether such water has come from the higher grounds; or has fallen from the clouds, or has filtered through the mound, or has been left behind by a flood which was greater than ordinary. The barrenness of such land is in no case to be attributed to its inherent qualities, which may be very good, but to these unfavourable circumstances in which it is placed. The only possibility of bringing ground, in this situation, to carry even hay of any value, appears to be by cutting canals on the lowest

parts of it, with their direction towards the foot of the nearest stream in the adjacent river or brook, by which it is occasionally overflowed. When the stagnant water is thus discharged, marshy ground may be brought not only to carry sweet hay, but the higher parts of the field may probably be subjected to the plough, and carry the most luxuriant crops of corn. If the stream has such a declination as to prevent any still water at the sides, these mounds are not formed, because none of the mud gets time to subside; it is carried along to the first place where the water stagnates. Morasses are seldom or never formed in the back grounds of such fields, however horizontal they may be. At the head of Strathnairn, and the head of Badenoch, the land has this appearance. There is no remedy in this case but embankment, to keep the stream within its ordinary channel.

In the lower parts of Badenoch, in Strathglas, and in some other places, the flooded water stagnates, and forms the morasses above-mentioned. Wherever a river forms windings in its course, that very circumstance is a sure sign, that it is occasionally overcharged from the higher ground, with more water than its natural channel can contain, and must overflow its banks. If the declination be considerable, it breaks down these banks, and carries away great quantities of soil from one side, and leaves beds of sand upon the other; but if there be little declination, it spreads, becomes stationary, and leaves soil, but forms the bogs and sour ground above-mentioned.

A river, flowing into the head of a lake, becomes necessarily still water, as far back as the surface of the river is in the same plane with the lake. Besides the effect of such a river in forming marshy grounds, if

its current be slow at its mouth, there is a concurring cause, which not only increases the dimensions of the boggy land, but renders the draining of it impossible. When the wind blows up the lake, the force of the wind and the strength of the stream act in opposite directions, insomuch, that the waves agitate the sand and earth, and raise a mound at that end of the lake, which becomes higher than the land behind it. Large tracts of ground are thus lost in the Highlands, and in all other mountainous countries which abound with lakes, where lagoons and swamps are formed; which must be left as they are; because all the efforts of human industry can do no more to increase their value (unless the outlet of the lake can be deepened), than merely to keep down the brushwood, which grows in such places, and thus to render them accessible for cattle, to pick up such grass as can be got.

Lakes are not only increased and thrown back upon the land, by the rivers which flow into their head and sides; but if a rapid brook should happen to come across them at the outlet, of which several instances are in the Highlands, in these cases, such a quantity of loose materials is accumulated generally at the mouth, as chokes up the passage, raises the surface of these lakes, and forces the waters back upon the flat land at the head and sides; which, in all these situations, forms soft ground calculated only for pasture and natural hay. Much surface is covered by these means, which must be constantly under water, besides what will yield any benefit, by being depastured or subjected to the scythe. Common sense plainly dictates the cure for this evil to be, cutting the bar which is formed at the outlet and forces the water to regorge. These bars are the more easily cut, because they are com-

posed of loose materials; and yet the sides of the drain must be kept from falling in, by a stone wall, or well barricaded with timber. It may be advisable to make no part of this canal, except the mouth next the lake, any wider than barely to receive the water; which circumstance will increase the force of the current, and assist in deepening the canal itself, and carrying the obstructions away. The torrent, which originally formed the bar, must be turned into some other direction, and the safest direction is by the lower side of the bar.

When the water cannot be drained from a piece of soft ground by any of these means, it must be thrown up in beds, with trenches on each side, to hold the superfluous moisture. At all events, it is necessary to grub up the whole brushwood, and to shave off the hillocks which are formed about the roots, by the eddies in the water, which raise the mud into heaps.

Meadows of the description alluded to in some of the places above-mentioned, are said to produce hay of an excellent quality, amounting to betwixt 80 and 100 stones upon the acre, which perhaps is a more profitable return, in such a climate, than could be obtained by corn crops, even where the land could be laid so dry as to render these practicable. In different parts of Badenoch, great pains have been taken to raise embankments of earth, to confine the Spey within its channel; which spirited undertakings must not be passed over without due commendation in the proper place.

The pastures at the sides of rivulets, which are unfit for hay, or cannot be spared from the summer food of milch cows, are so frequent, so various in their quality, and so much detached over all the Highland parts

parts of the county, that it is unnecessary to give a particular description. The salt marshes on the estate of Newton, along the Beaulieu firth, ought however to be taken notice of, which afford very rich pasture for horses and sheep, when the reflux of the tide gives an opportunity to approach within the sea mark,

The hills abound so much every where with brooks, that where these streams are not deep sunk within their bed, the pastures which are at present green, might be greatly enriched by irrigation; and many places, which are covered with heath, might be cleared of that shrub, and converted into green pasture. The incalculable advantage of this species of improvement upon moors, which have a gentle declivity, will no doubt occur to every one who bestows the least thought upon it, and will assuredly be tried by some of the gentlemen and farmers of that country, who are emulous to set proper examples before those who stand in need of such beneficial lessons.

Select the rivulets which are most muddy, and not very strong, if you can have a choice. Divert them from their channel, where the current is least powerful, which generally happens where the banks are lowest; make a bulwark across the rivulet, of as large stones as can be conveniently got, and let it be as high as the summit of the bank on both sides; line this bulwark with green sods well beat together in every course; cut a canal to draw out the water, laying the sod on the lower side, which needs to be no deeper than to hold the quantity you wish to employ. All that remains to be done is, to continue this canal along the face of the field you wish to improve, with such a gentle descent (perhaps one inch in every three feet), that the current may not dig the ground, nor carry sand and gravel.

Below

Below the upper canal make another, to catch the water that escapes from the first, as it goes along; for your watering canals must never be so tight, as not to let a little water filtre through in many various places. Form another canal below the second, and parallel to it as nearly as possible; and so on, at the distance of twenty or thirty yards from each other, making as many canals as will strain the water, and exhaust its fertilizing virtues; which may be guessed at, by its becoming pure after having left the sediment behind.

That the declivity of your canals may be exactly what you wish, an equilateral triangle may be made by any common carpenter, with two straight sticks or slips of board about the height of a man. By applying the carpenter's square at the angular point, the vertical angle may be made a right one, and then nailed. Take care that the two legs be cut precisely at the same length, on which circumstance the accuracy of the instrument depends. About eighteen or twenty inches from the base, but exactly the same on both legs, nail a cross bar, which will strengthen the instrument. Smooth one side of this bar, and exactly in the middle make a notch or stroke. Hang your pendulum from the angular point above; and if the instrument be just, the plumb-line ought to hit on the notch of the cross bar, when it is set standing on a horizontal or plain surface. By this machine, a water-course may be drawn along any ground, except a hollow, by observing that the plumb-line leans a little forward, as much as you wish the declination of your canal to be; and by marking every stride of the instrument, a considerable line may be drawn in a short time. If a small hollow is to be past over, this must be done by making a bank of earth, upon the principles

ciples of a Roman aqueduct, and the canal made on the top.

The only apology for this description of the canals for watering land, and of the level for drawing them at the declination necessary, is my entire persuasion of the advantage of this method of enriching land, and of increasing the quantity of green pasture; and my anxiety that it were tried, where the circumstances are so favourable, and the necessity of it so great, as appears to be evident in many places of every district of this widely extended county. This is the least expensive of all manures; being furnished by the bounty of Heaven, without any merit in man, except the mere act of distributing the water equally over his land. What further occurs on the subject, will be taken notice of in the Section allotted to flooding, according to the plan laid down by the Honourable Board for these Reports.

In the county of Inverness, where the proportion of arable ground is so small, in comparison of that which can only be in natural meadow and pasture, it must be accounted a trespass against the State, and against the human kind, to alienate from the purposes of agriculture any small patches of land, where the plough can act, and throw them into sheep pastures. Does not the unmeasurable surface of hills and mountains afford plenty of room and plenty of food for sheep? Why then, alas! turn out ten or a dozen families to make room for a flock of sheep; and set them adrift into the wide world, without knowing where to go; without house or home? What a dreadful calamity to these poor people! How unfeeling and savage the heart, which is the cause of their wretchedness? A wretchedness never before heard of, since Scotland

was inhabited ! Who, that has the common feelings of a man, but must feel indignant at such barbarity !

Ye theoretical writers on rural economy, who amuse the world with your fine-spun cobweb dissertations, to deceive the proprietors of land and others, with plausible sophisms, equally equivocal and equally ruinous with the responses of the Grecian oracles ;—who endeavour to shut their eyes on the miseries of depopulation, to shut their ears against the tale of woe, and to harden their hearts against the feelings of humanity ;—come forward with your cant phrase—every thing will find its level—a phrase which, like the panacea of the ancients, you esteem as a plaster for all sores of this kind. You tell us, that when the price of grain falls low, land will be thrown into pasture ; and when the price of meat falls, and that of grain becomes high, the pasture lands will be ploughed up : you then, without attending to intermediate circumstances, jump to your conclusion at once, asserting, that by throwing the arable ground into grass, the population of the country is not diminished. This discovery, which is thought by you as meritorious as the knowledge of the philosopher's stone, may be true in one sense, and false in another—locally or partially true, but generally false. Keep all the inhabitants, or an equal number, in any tract of this country, and I may perhaps be inclined to think well of your maxim ; but when the bestial of a district are made to travel hundreds of miles, as they always are in this case, to fetch the highest possible price, what becomes then of your golden rule of a *level* in the district where these cattle were reared ? Suppose that one-third of the inhabitants of the county of Inverness were banished or starved—not a bullock nor a sheep reared in the county would remain unsold, notwithstanding

notwithstanding all this loss of people to their King and Country, or perhaps would fetch less profit to the graziers, when these bullocks and sheep were brought to the autumnal markets in the southern parts of the island. But perhaps you, Theorists, care not for population or depopulation; that point probably gives you little or no uneasiness. Do you believe that money is every thing, and that men are nothing? If you do so, no man will envy you of your sentiments.

But if your reasoning turns upon the quantity of human food produced by a given space of land, this narrows the argument, and may bring it to the test of experiment, the surest of all proofs, before which all specious, but unfounded theories, will vanish like the baseless fabric of a vision. Take 60 or 100, or any given number of acres of arable land, of the same quality, divided into two equal parts; subject one of these lots to a regular rotation of cropping, according to the most approved rules of good husbandry; stock the other with cows or sheep, for the space of eighteen or twenty-four years, or any space of time; reckon the number of months that can be maintained exclusively by the produce of each lot, until the termination of the experiment; and then it will be seen which mode of occupying arable land is most productive of sustenance for man. I venture to foretell, that the number would be double, or more than double, in favour of the arable system; and were it not from a reluctance to swell this Report beyond all due bounds, which is beginning already to be too long for myself, and, I fear, may be still more so for the patience of those who may be inclined to peruse it, I could go through a calculation (which might still be objected to, as not fully satisfactory) of the produce of both lots annually, during a certain

certain number of years, and of the number of persons each would maintain; by which detail, a conviction of the truth would be founded at least upon moral evidence*.

Being fully aware that the abettors of the opinion animadverted upon, may object that I am reasoning hypothetically, and that I have not produced the facts by which this question can ultimately be decided; I answer, 1st, That it requires time, and a careful induction, to collect the necessary facts; and, 2d, that neither have they produced facts, nor *can* they produce them; because, by a fair induction, their hypothesis would be overturned, and the opposite proved to be true.

Honoured by the public, no less than beloved by their own tenantry, be the names of those gentlemen of property, who have not been seduced by these delusive and interested schemers, nor have thrown their arable lands into pasture in the shire of Inverness, where the soil productive of corn is so scanty; and who have not converted the plough into a shepherd's crook, nor the ploughshare into a pair of scissors for shearing sheep.

* The calculation is very simple. Take the number of sheep or black cattle, which a given number of acres of land fit for the plough, will feed in pasture: assume a given weight for the butcher-meat to be derived annually from the milk and flesh of the *increase* of these animals; take a certain average quantity of grain, as the produce of an equal quantity of the same sort of ground, and it will be found that the latter will greatly exceed the proportion mentioned by the learned author.—*Sir John Murray, Bart.*

SECT. II.—ARTIFICIAL GRASSES.

THE sowing of artificial grasses has hitherto been very partial in this county, excepting a few provinces, where the climate is friendly to cultivation; and where some persons of spirit have introduced them. A country must be forlorn indeed, where there are not some men of a luminous understanding and of an active spirit, to stimulate the enterprise of their neighbours. The vicinity of Inverness, and particularly the Aird, so often mentioned, seem to have been the centre, from which all the rays of agricultural knowledge have spread over the other divisions of the county, where the dawn of improvement hath begun to appear; and even in the distant districts, the casual circumstance of the residence of a gentleman of enterprise, possessing a good farm, and paying attention to what he had seen going on in other places, has roused his neighbourhood from the slumbers of former indolence. So fortunate has the country been in general, with respect to proper examples, as formerly hinted, that there is hardly a glen or corner so unfortunate, as not to have some pattern daily before the people's eyes, showing how they ought to manage their farms with more profit to themselves and advantage to the public. This prognosticates much good: for although the common people are much attached to old customs, which they venerate with a share of the filial affection they had for their fathers who used them, yet a regard for their own advantage must, at length, bring them round to adopt substantial modern improvements. This change will however be gradual, but its progress will

will be accelerated by other favourable circumstances, besides that lately alluded to.

From the west end of the Aird to the extremity of the county upon the East Coast, the cultivation of sown grass is common, except in very few places. Cantray in Strathnairn, is like a light in a dark place; so are the farms of other gentlemen, in the bottom, and in the very head of Urquhart; in Lochaber, Glenelg, Glen-spian, Badenoch, Strathspey, and Stratheric, and many other districts, where the cultivation of red clover and rye-grass is successfully carried on upon a large scale. The general average of the hay-crop among the best farmers, is nearly 300 stones upon the acre; but white clover and rib-grass are only partially introduced. The seed of home rye-grass is in some cases thrashed out for being sown, but it is for the most part imported from England; all the other seeds are regularly brought from other countries.

The lower ranks of tenantry are beginning to sow little patches of red clover, for house-food to their milch-cows at night in summer, and for their horses while employed in carrying home the fuel; and these are happy presages of what shall soon be done. Although hitherto few or none of these have sown grass for hay, the time is not distant, when a desire to promote their own advantage will urge them to begin, provided the owners of their farms will give them leases of a moderate duration, and enclose the arable ground.

The prices of hay vary like all other commodities offered for sale, according to the demand. Sometimes it is sold so low as sixpence the stone, of twenty-one ounces to the pound; at other times it fetches one shilling; as provender happens to be plentiful or scarce. The common market is the county town, where the
consumpt

consumpt is greater than the immediate neighbourhood can supply. Fort George also consumes a great deal of provender. When the harvest is unfavourable, and much of the straw is lost in the Highland districts, the inhabitants come down in great numbers to buy hay to keep their cattle alive, and carry it home on horses' backs; for in many of these defiles, in place of being able to use wheel-carriages, a horse with a load on his back can hardly travel. Many a path I traversed, where it was impossible to ride. My horse was led, and even a guide of the country occasionally requisite, to point out the path to us where it was safe for horses to go, by avoiding mosses and rocks, and other coarse ground. Great praise is due to those who suggested, and to the Legislature which enacted, the late law for the improvement of the roads in the Highlands of this county. It ought to be extended to all the Highlands: no country can be improved until it is made accessible.

The reader's patience must not be exhausted by giving directions about other kinds of sown grass that might be tried; nor as to the time or manner of sowing artificial grasses; nor in pointing out the preparation previously required to put the soil in proper order; nor in giving the marks of their being ripe for mowing. Whoever are unskilled in these matters, have nothing to do but to imitate the practice of the improvers every where around them, whose daily example is a better lesson than any thing which can be said in this or any other publication.

SECT. III.—HAY-HARVEST.

THE practice of the most experienced farmers is, to begin the hay-harvest about the 1st of July, which is generally finished, if the weather be favourable, in a few weeks thereafter. In the mountainous parts of the county, they neither cut down so soon, nor is the termination of the hay-harvest at all certain, by reason of the unsettled nature of the climate. The lateness of the commencement of this harvest, is occasioned by their keeping their flocks on the low warm pastures, and allowing them to enjoy the whole range of the farm in spring, not only during the crisis of dropping their lambs, but until the lambs have acquired strength, to endure any casual blasts which they may have to encounter after they are removed to the hills.

The bog-hay is made in August for the most part; but every operation of hay and corn-harvest depends so much on the weather, that the accounts received of the conclusion of either corn or hay-harvest are extremely various. In some seasons it is protracted, until the inhabitants, who have great quantities of hay, must begin to reap their grain; which circumstance creates much embarrassment. The method taken to save these two kinds of hay in the county of Inverness, is similar to the practice of other countries, which need not be particularly described. The sown grass is more easily brought to a state of preservation, both by the length of the day and the chance of better weather, when it is cut down, and by the stalks being stronger, and therefore more pervious to wind and air. The bog-hay is so flexible in its nature, and so ready to clap close together

ther in the ricks, that it must be frequently opened out and telled, and turned to sun and wind, before it can be reckoned to be out of danger.

When men are hired to cut hay by the day, their wages are from 1*s.* 6*d.* to 2*s.* besides their maintenance. When they are hired by piece-work, the contract is from 2*s.* 6*d.* to 3*s.* the acre. But by all accounts, there is considerable difficulty to procure young men for this or any other species of harvest-work, in the higher districts of the county. It is said, and loudly complained of, that in place of engaging as men-servants for a certain time, or occasionally as labourers, they loiter idle during the winter; they purchase barley in spring at the ports of the Firth, which they find means to convert into malt; and on the approach of summer, they retire into the fastnesses behind the mountains, and carry on the trade of illicit distillation. The profit derived from this species of fraud is so considerable, that these, who are engaged in it, disdain to labour; and the quantity of spirits is so great, that they are vended far and near, under the enticing name of Ferintosh whisky, to give them a character.

A singular custom prevails in many parts of the county, of making their hay barns so open, as to admit a free circulation of air. This is done by building the gable ends neither with stone nor sod any higher than the side walls. The triangular tops of the gables are closed in, only with stakes, which are wound up closely with broom or brushwood, as has been already taken notice of. When the hay is damp at the time it is thrown into the barn, the inhabitants in this and many other counties in the Highlands, set up flakes of wicker-work or sticks against the side-walls, within the whole barn, which reach from the floor to near the top of the
s 2
wall,

wall, having the lower end some feet out from the bottom of the wall, and so close together, that little or none of the hay can fall through ; which gives a draft of air from end to end. On this frame the moist hay is spread loosely, and frequently turned, until it be completely dry for being put up ; and then another quantity is brought in, laid on the frame, and treated in the same manner.

Bog-hay is supposed to be of one-third less value than the hay of sown grass ; and sown grass is thought to lose one-third of its weight between September, when it is taken out of the tramp rick, and the next spring.

All hay ought to be cut down when it is in the highest degree of succulence, before its juices are exhaled. When reaped before that period, it shrinks, and becomes less bulky or nutritious, like unripe fruit : if allowed to stand too long, the leaves fall off, and the stalks become hard and wiry ; and the plant is so much exhausted by the effort of ripening the seed, that the stalk is not only injured, but the root takes a long time to spring, which retards the second cutting. The instinct of cattle gives us instruction upon this point. Turn in cattle to a field where some of the grass is shot up to seed : they uniformly reject the grass which is exhausted by being too ripe ; which shews that it has lost its most nutritious juices, of which they are the most competent judges. During the season of ripening the seed, all plants are more impoverished than at any other time. Whoever wishes therefore to have his hay in the best possible condition, and his land least impoverished, will cut it down when the seeds are beginning to ripen.

A crop of rye-grass alone, if the seed is allowed completely

completely to ripen, is as severe upon land as a crop of oats; and perhaps the general practice of allowing rye-grass to ripen, before it is cut for hay, may be the reason why so little perennial rye-grass is to be found. If seed is the object, let a part of what was hay the preceding season, be completely protected during spring: when the grass has put forth the ear, let boys or girls go through, and pick out as much as they can, of goose-grass and other grasses not wished for; let the remainder be cut with a sickle, bound up, and stooked like corn, stacked, and thrashed in spring.—Children may then be also employed, to pick out those stalks of goose-grass which remain:—this is the more easily done, because the goose-grass is generally taller than rye-grass.

The natural hay of lea ground is preferable to hay from sown grass, for the use of horses accustomed to travel. This is well understood about London. The latter makes them puffy and breathless; the former has not that effect.

SECT. IV.—FEEDING.

THE practice of house-feeding is, in every county, accompanied or preceded by the cultivation of green crops; and for the most part a considerable time may elapse, before the full benefit of feeding cattle in the stall, during summer and autumn, be properly understood. In low countries, where the inhabitants have no hill-grass, they fall into this practice much sooner, than in those where every farm has a portion of hill for the young stock and the sheep, besides some finer pasture

next to the arable ground, for the cows which are giving milk. In all the county of Inverness, no instance of house-feeding milch cows occurred in the autumn of 1804, except at Newton, in the Aird, where the cow-house and every other accommodation necessary for a farm, as mentioned formerly, was in excellent order, and executed in the most substantial manner.

When the waste of grass occasioned by the treading of cattle upon soft pastures, especially in wet weather, and the surface which is covered by the dung they drop, are duly estimated; when it is found upon trial, that the produce of the same field will feed double the number of cattle in the house or in the straw-yard, that it would do in the open field; when the ease of the cattle themselves is consulted, by preventing their being one while drenched in rain, or perhaps chilled with cold, and another while annoyed with flies, and compelled to exhaust their strength running about and destroying their pasture; when it is understood, that the quantity of milk from the same cows is greater in the house than in the fields; when the great saving of dung by house-feeding is taken into consideration, by those who are desirous of increasing their means of meliorating their soil; when all these circumstances are taken into the account, the practice now alluded to will be adopted in this, as it has already been, upon a large scale, in the county of Perth and elsewhere, by the most intelligent improvers.

Among the small tenants who keep a mixed stock of cows, and horses, and sheep, and goats, according to the mode of farming in use about a century ago, and who have large bounds of hill-pasture adjoining to their farms, the practice of house-feeding for some time to come is not to be expected.

In place of doing this, the inhabitants, who continue the practice of going to shealings, after the crop hath been sown and their peats cut, remove annually in the month of June to their distant pastures, with all their cattle and families. In some snug spot, the best sheltered in all the range allotted to the cattle, they reside for a certain number of weeks, until the pasture become scarce. Old huts are repaired, or new dwellings are built for their reception, while they attend their cattle in these remote situations; and to preserve the grass, so that the cattle may have plenty at their arrival, a trusty person is sent before them in due time, to drive away any wandering cattle which might trespass on the bounds that are to be preserved. Here they live in great simplicity, on the produce of the dairy and some meal. The men return occasionally to the farm or home-steading, to collect the fuel, to hoe the potatoes, and to weed the crop; and when the season for weeding the flax arrives, the women come home for that purpose. If their bounds be extensive, they have frequently more than one of these stations, which are called *ree*, or *aree**, in the language of the country, and shealings in English. In such cases, the guardian of the grass is sent forward to another shealing, whenever the families arrive at that destined for their temporary residence. This trusty servant, on whose fidelity so much depends, is called the *poindler*, probably because he has public authority to poind and confine

* *Ree* seems to be the oblique case of the Gaelic word, which signifies a deer-forest. These shealings therefore were the first encroachments made by the inhabitants and their cattle on the province of the deer, after they had got full possession of the straths and lower vallies.

cattle that are troublesome, and charge the fine established by law for their trespass.

When these pastures are uncommonly rich, as happens to be the case at the head of lakes, or by the sides of brooks in low vallies, the inhabitants of two or more farms, belonging to the same proprietor, associate together, and eat the grass of their shealings in common. This may be the case, even when the grass of each of these farms, which is adjoining to their home-steading, is distinctly marked, and their boundaries are carefully kept.

They do not depasture these shealings, or any part of their grass at random, as may be supposed by persons who take a superficial view of their manners and customs. The whole grass is *soumed*, which means the sum or number of full grown cows it can maintain. A horse is accounted two soums, and so on with different or younger cattle of all kinds; and every farmer enjoys his own proportion of soums on the whole pasture, according to his share of the arable ground. By this expedient one cow-herd, or one shepherd, serves several farmers, in place of every man having one for himself, while each has a fair division of the grass. The practice of consuming unenclosed or mountain pasture by souming, has been ridiculed; and what is it, that has not been turned into ridicule, by those who do not understand its usefulness! No other method seems to be equally just, or equally convenient for consuming grass in the same circumstances, where a number of different persons may have had a right to shares very different from one another, and the kinds of cattle also different.

This is the season of contentment, of festivity, of
health

health and joy. The women employ themselves in spinning wool to clothe their families, and in making butter and cheese for part of their winter provision. The youth are employed in fishing, and wrestling, or other athletic exercises which put their swiftness and courage to the test, as a preparation for the more serious conflicts of a field of battle. When the various labours of the day are closed, the whole hamlet retires to rest, and drown their fatigues in the soundest slumbers, on a bed of heath*, whose mellifluous fragrance perfumes the whole dwelling.

They have no other way, in the system of farming they follow, to depasture their distant grazings; and no person, without incurring the imputation of rashness, can call people unhappy, to whose sentiments he is an utter stranger; nor will any man, in the least degree conversant with the history of other nations, stigmatize them. Fastidious observers, who estimate happiness by the standard of polished life and crowded cities, unguardedly reproach these groups of people living in huts, as the most wretched of mortals, without reflecting, that happiness or misery are seated in

* A heather bed is formed of the longest, straightest, and finest single stalks of the young heath. When these stalks are in their highest bloom and fragrance, they are pulled with as little root as possible and laid down like hay in the swath for some hours, till the dew or any accidental moisture be exhaled. Then the heath is laid as thick and close as it can stand, having all the tops uppermost, and inclining a little towards the head of the bed, which is generally against a wall: the foot and the sides are kept together by logs of wood, cut at the proper length. The appearance of this bed resembles a rich Turkish carpet, or a field of rich grain all leaning one way; and the odoriferous effluvia of the honey with which the blooms of the heath abound, spread a grateful perfume, inviting to repose.

the mind alone, rendered wisely independent of adventitious circumstances; and thus expose their ignorance of the feelings of these people. Neither do they consider, that these people cannot, in their present circumstances, reap the benefit of their distant pastures in any other way. Nor do they reflect, that they expose their own want of reading, or acquaintance with the history of ancient nations, who were *all*, without exception, at one period in the same state of society.

These sheatings are falling into disuse. In place of such emigrations from place to place during the summer, the distant grazings are frequently disjoined from the farmer's home-stead, and left to shepherds, who live there all the year round, attending their flocks, in a modern house of substantial mason work. By this mode of occupation, the landlord draws more rent from the remote glens and mountains of his property, and the farmers are at liberty, during the best season of the year, to ply the necessary and various labours, for the improvement of their arable ground, which to industrious men are never at an end.

It is the opinion of the most experienced graziers, that a large extent of grass-lands, suppose 100 or 200 acres, allotted for fattening cattle for the shambles, will produce better beef, by having their pasture divided into three enclosures, than by having only one ring-fence round the whole; because, by being removed from one enclosure to another, as occasion requires, the cattle have frequently successive changes of clean grass, which increases their appetite, and liveliness, and lessens their toil. This may not, however, be so suitable for the sheep, which are fond of a large range of pasture; unless different pastures be
allotted

allotted for sheep of various ages, and for those intended for different purposes.

It seems also to be an established maxim in grazing, never to put horses and cows and sheep together in the same field ; because horses and sheep bite so close, that cows have no chance for a fair proportion, if the grass become somewhat bare. If any are to be joined with others to pasture in common, let it be the horse and sheep. The first eats the fat grass that rises around the dung which is dropt ; and the second is fond of what is short and sweet ; and yet some experienced graziers disapprove of mixing even horses and sheep in the same field.

What is singular, and not very easily accounted for is, that we find the tops of hills and mountains frequently covered with a fine rich carpet of thick grass, while the skirts of the same eminences abound with barren heath, bearing hardly any mixture of grass at all. Many appearances occur in the economy of Nature, which baffle all our penetration to unravel ; we must have recourse to the wisdom of the Great First Cause, which moves every wheel in the great machine of the universe. Were the summits of mountains as fertile as their middle or base frequently is, cattle, which never take more toil than is necessary, for their own support, would not be induced by any instinct they possess, to visit these distant regions, which are difficult to climb. When the lower vallies are scorched with broiling heat, about the time of the summer solstice, the sheep meet a cool refreshing breeze on the higher eminences, where they find some pasture, and increase the quantity and quality of that food, by their residence in such situations during that season. So accurately do they discriminate circumstances, and even appearances

ances which are favourable, from what are adverse, that on the eve of a blast at any season of the year, we find them descending in quest of protection and shelter, and on the approach of fair weather they re-ascend the hills.

CHAP. IX.

GARDENS AND ORCHARDS.

THE knowledge of agriculture must have made considerable progress, before horticulture can become general in any country. Foreigners, or persons bred in foreign countries, may introduce, in some particular places, as was done by the Romish Clergy into Scotland, a superior style of gardening; but these instances were partial, and had little influence upon the general taste of the inhabitants, in this species of improvement. It requires a degree of refinement, and a desire for the enjoyment of those luxuries of life, to which our forefathers were strangers, before the Reformation, to reap much advantage from the horticulture of cloistered monks, secluded from the profession of arms, and despised by a warlike people, as something less than men.

At the priory of Beaulieu, the religious order who inhabited that place, had an excellent orchard and garden, the remains of which still exist. A famous pear-tree in that orchard, is said to have, in its prime, carried sixteen bolls of that fruit in a season. The intercourse betwixt the monks and Rome was so frequent, that they had the opportunity of introducing the choicest kinds of fruits, which had been long established and cultivated in the genial climate of the south of Europe.

Lochaber has its apples, and geans (a small kind of cherry), in great perfection and plenty; the former abounds also at Keppach; the latter at Fasfern. Governor Brodie's garden, at Fort Augustus, has plenty of fruit.

fruit. Invermoriston, Urquhart, Corrimony, have their great and small fruits in abundance. In the Aird, every gentleman has his orchard. Belladrum, Renduie, Achmagairn, Newton, Kirkhill, Fingask, Kengilly, Moniac, Warranfield, Kirktown, Phoppachy, Eaglestown, Bonchna, and several other places in this well cultivated district, abound with fruits of various kinds. But the most extensive garden in the Aird, was made by the late General Fraser of Lovat, who enclosed no less than seven acres of ground, with a brick wall, so high that it required buttresses to support it. Its walls were clothed with fruit-trees of the best kinds and greatest variety, besides an excellent hot-house. Every gentleman near the head-town of the county, has his neat garden and fruit-trees, suited to the extent of his property. Culloden has a large hot-house under a glass frame. Castle Stuart has a very extensive old orchard, which, besides other fruits, abounds in geans. Cantray and Castle Grant, besides many other places in Badenoch, have gardens in high order; but in none of all these places are the orchards left for rent. The owners have them in their natural possession, for the use of their own families and friends.

The fruits of shrubs are attended to in many other places, and consist of the most approved kinds.

Cabbages, coleworts, and roots, are raised in the kitchen-garden by every person, except the meanest of the inhabitants; and the very poor themselves have some kind of garden.

It has been observed by persons in this county, who have paid attention to orchards—

1. That trees raised and engrafted in the country, thrive better than those brought from warmer climates.
2. That in order to render fruit-trees productive, they

they must be grafted on stocks of their own kind. Scions of fruit-trees will unite with barren and forest trees, and produce fruit; and some men have a practice of grafting pears and apples on hawthorn stocks; but an orchard of such trees will disappoint the expectations of the owner. The hawthorn stock pushes its root downward, and soon gets to the barren soil, which will indeed afford nourishment suitable to that kind of plant, but by no means sufficient vegetable food, nor what is adapted, to a fruit-tree. The grafted part grows faster, and swells more, than the hawthorn stem, by which means the nourishment becomes too scanty, and the tree becomes sickly, and then decays.

3. The old practice of laying flags at a proper depth under fruit-trees, is an antidote against these consequences, by preventing the tap-roots from going directly down, and making all the roots spread horizontally, where the warmest and richest earth is found, which therefore affords the most abundant nourishment.

4. In some of the gardens of this county, there are apples of a good kind, which were probably introduced by the monks at Beaulieu: they keep long, bake well, and are full of juice, and it is thought, are little, if at all known, in other parts of the island.

CHAP. X.

WOODS AND PLANTATIONS.

WOODS of various kinds, suited to the climate, and grasses corresponding to the quality of the soil, are the covering which Nature has universally given to the face of the earth. These barren spots of sand, in some places under a vertical sun, where neither animal nor vegetable life can exist, hardly form an exception. Men are a foe to woods, in proportion as their numbers increase. The ground must be cleared to support an increasing population, and trees must give place to plants, whose seeds afford farinaceous and nutritious food. From the appearance of stocks and logs of timber in all the mosses of this county, there is not the least doubt of the whole land having been at one time clothed with wood. The Scotch pine, for the most part, took possession of the south side of the valley, as was already remarked, and made choice of a northern exposure; the birch, the hazle, and the oak, occupied the warmest side of every district, while the alder and a few ashes ran along the streams. Not only the continental parts had this natural mantle, but the islands of this county appear, from the fragments of trees found in the mosses, to have been at some remote period mostly, if not wholly, under forests. The only remains of growing wood at present in the islands, are at Portree and Slate, in Sky, and a little in the island of Raasa. Is it not very extraordinary indeed, that the tops of
moun-

mountains, and the islands of this county, were formerly wooded, where no human efforts can at this day bring trees to grow? The solution of this question is left, in the present Survey, to the investigation of the curious: any answer that occurred to me, is taken down in some conjectures recorded in the Report of Perthshire.

Although the whole country seems, at that time, to have been one continued forest, except within the flood-mark of the rivers; yet, from the peculiar circumstances of Scotland, this county, as well as others; was soon laid bare.

The warlike disposition of the inhabitants, the broils of the Clans, the frequent insurrections against the government, their fierce conflicts to resist invasion, their continual alarms from the southern frontier; all conspired to suggest in every generation, as one uniform system of policy to the inhabitants of a narrow country, the necessity of increasing the population, as the only means of preserving themselves from extermination. This policy brought every inch of land into cultivation where an ear of corn could grow, according to the rude husbandry of those times. But this policy was destructive of the growing timber. No wonder that the trees were felled to make room for men, when we consider, that such a small territory could maintain so many men able to bear arms, as to preserve to their country the singular, and therefore envied distinction, of having *never* been conquered, notwithstanding the eager exertions of Agricola, of the Danes, and of Edward the First, at all hazards to accomplish its subjugation.

That species of the pine called the Scotch fir, covers more surface in this county, than all the other kinds of

trees taken together; and the natural fir woods of Inverness-shire exceed the quantity of this wood growing naturally in all the rest of Britain. In Strathspey alone, it is reported upon authority which cannot be called into question, that *fifteen thousand* acres of ground are covered with natural firs. On the south sides of Locharkaig, of Glengarry, of Glenmoriston, Strathglas, Glenstrafarar, and at the head of Loch-sheil, as mentioned above, the bounds of country under this wood are reckoned by miles, not by acres. The present contract for cutting the pine forest and birch in Glenmoriston, yields to that single proprietor eight hundred pounds sterling annually, for the space of seven years. This may give some idea of the value of the rest, though the plan upon which they are disposed of, did not enable me to state their produce with correctness.

The plantations of fir on the estate of Lochiel; of Bel-ladrum; in Stratheric; down the back ground of the county-town; on the north skirts of the moor of Cullo-den, for many miles; on the Earl of Moray's property; and eastward by the church of Croy to the extremity of the county—are so immense, that it was impracticable to obtain any criterion whereby to judge accurately of their size. The planted firs and larches of Strathspey, besides the natural firs, are supposed to extend over seven thousand acres; and at Kinrara, Invereshic, Belleville, Cluny, and other parts of Badenoch, and in many other places, the plantations are both extensive and thriving.

The oak woods of this county are not so large, nor so well taken care of, as they are in Perthshire. The neglect with which they are treated, is injurious in a high degree to the returns they make to the proprietors.

Being

Being the most valuable woods of any, which are natural to the climate of Scotland, the gentlemen in other counties, on whose lands they grow, are in general at uncommon pains to have them duly preserved; and this attention is the more necessary, because the young shoots are so tender, and the buds so succulent, and therefore so palatable, that all kinds of cattle devour them greedily while within their reach. This is not the case, in the same degree, with the resinous pine. Oak copse is not only liable to the depredations of cattle, during the first seven years after it is cut down, but in many parts of this county is overtopped by aged birches of thick branches and immense tops, and other tall trees interspersed among the oak, which injure the young growth by their umbrageous foliage, and their continual dropping, to such a degree, that it is wonderful the copse, in such adverse circumstances, can rise at all. When copse-wood of oak is cut, all the birch and hazel near the oak-stocks ought to be felled, because the injury they do to the young stocks of the oak by far exceeds their value; and not only so, but as the young birches of the succeeding growth will soon outstrip the oak of the same age, the former ought to be kept down until the latter get the mastery.

Colonel Cameron of Lochiel, and Mr. Cameron of Fasfern, are perhaps the only proprietors in the county, who enclose their oak woods. Along the north side of Loch Ness in particular, large tracts of oak wood are in the forlorn predicament above alluded to, interspersed with hazel and full grown birch trees, that overtop and retard the springing of the young oak; and to crown the destruction of the tender growth, no enclosure whatever is made around them, to prevent the depredations of cattle. In Glenspian, Badenoch, and other places,

there are patches of oak more or less extensive, which are all shamefully abandoned, after every cutting, in the same neglected condition.

Where the oak grows without a mixture of other kinds of timber, as it does in some of these places, the branches of the oak trees, after the bark has been taken off, and other small wood, would suffice to make a paling round the boundary of the wood, which with very little occasional repair, might defend the tender shoots, growing from the stocks, while they were in danger. In every contract, over all the county of Perth, with cutters of oak woods, and probably every where else, except in the shire of Inverness, one of the principal articles is, to prohibit the contractor from disposing of any of the peeled timber until the wood be enclosed, where there is not a stone wall. This paling is made at the expense of the proprietor, at the low price of one penny, or a little more, the yard. The possessor of the farm is generally employed to enclose, because the paling and wood are upon his care, by the terms of his lease, for the term of six or seven years thereafter.

Not only are oak woods of other countries enclosed and protected in this manner, but they are carefully weeded—1st, By keeping down the barren timber which surrounds the stocks of oak, and choke them for want of air, and the dropping of water from their overspreading branches; and 2d, By thinning the oak itself, in cutting away the dwarfish shoots, or such as rub against one another, when the oak is eight or ten years of age. By the first precaution, the oak spreads, and will occupy the space of the barren timber which is kept down: by the second, the whole nourishment afforded by the soil is applied to the valuable part of the oak itself, and none diverted to what is less useful or ornamental.

mental. Nay, so attentive are some proprietors of woods which are in this predicament, that where the spaces possessed by barren kinds of wood are large, these are cut down without hesitation; and they purchase oak plants of twelve or fifteen inches long, and fill up the spaces at once, not waiting the gradual spreading of the oak by its own efforts. All the expense incurred, is the mere labour of cutting down what is barren, and putting down the oak plants, which expense will be refunded, with a return of more than five hundred per cent. at the very first cutting of the oak. If any owner of woods proposes to adopt this mode of increasing their value, I recommend that the acorns be sown in the same country, to inure them to the climate, and save expense; that when two or three inches long, they be planted out in drills, at such a distance that a common garden spade may be used in digging between the drills, without injury to the roots, to keep them clean, till they be fit for the plantation; and that the barren timber be employed in the first instance to rail them in, for protection. If the stakes are made of any barren timber except ash, I advise that the bark be peeled off, or at least loosened, by running the axe along the opposite sides, so as to let the bark drop off; because a peeled stub will last thrice as long as one having the bark, which by retaining moisture, very speedily rots any timber.

It is not in the place where every kind of barren wood grows, that oak will thrive. The hazel and oak delight in the same soil and exposure. The change in this case is perfectly safe, and the success certain. The birch, which is not far up hill, and grows on land that has a south aspect, may with equal advantage be sup-

planted by oak. But the ash, the aller, and the willow, covet soil which has too much moisture for an oak-tree.

The age at which oak copse ought to be cut, the best manner of cutting, the method of preserving the bark, and various other remarks relative to this valuable timber, and other kinds of wood, are detailed with considerable minuteness in the Survey of Perthshire, which I decline to transcribe here, to prevent as much as possible a dull sameness and disgusting prolixity.

The birches on the sides of Loch Ness, Loch Laggan, about Rothiemurchus, Kinrara, in the Vale of Urquhart, and other places, have a charming effect upon the scenery, and form a comfortable screen to increase the warmth in these situations: nevertheless, the value of this timber is little in comparison of the oak, except for the ribs of houses, and some clumsy farming utensils, which the tenantry frame occasionally for themselves. The bark is used for tanning leather, but is far less powerful than oak bark.

An observation made by a gentleman at the head of the Vale of Urquhart, suggests a curious fact, of which there is no doubt in that country, and very probably in others. The birch which grows in a northern exposure, is much softer in the timber, and consequently less valuable for the different purposes of the farmer, than that which fronts the south.

Trees of a distinguished size are rare in this county. The greatest number of large trees are at Castle Grant, Culloden, and at Belladrum, where stately trees of ash, lime, beech, oak, plane, and mountain ash, are to be found in the most thriving condition. At the last mentioned place, one of the larches was measured at a foot
above

above the ground, whose circumference was seven feet and a half, planted by Colonel Fraser himself from the nursery, twenty-six years ago.

The only nursery that occurred was at Newton, which is very neatly kept and well stored by Major Fraser, with a choice variety of plants: no doubt others escaped me. No plants reared in warmer climates, and on a stronger soil, can be equal in hardiness to those reared by the gentlemen of this county upon their own property. A small patch of ground adjoining to a gentleman's garden, and committed to the care of the gardener, may be very usefully employed in rearing thorns and forest trees. From the assiduity of the gentlemen to adorn the country, which is sufficiently evident from what they have done these thirty years past, and are now doing with increasing eagerness and success, there is no reason to suspect that this ardor will slacken, before the beauty and warmth of the shire of Inverness be highly increased, with equal taste and comfort.

CHAP. XI.

WASTES.

LAND which produces less grass than it might otherwise do, or which might be subjected to the plough, and rendered more productive of human food, may be denominated waste. The extent of surface in this situation within the bounds of Inverness-shire, is very great; but by the attention which some proprietors have already paid to the culture of such ground, there is every reason to hope, that the improvement of it will not only go on, as it has done for some years past, but become rapidly and extensively progressive.

Where the ground is so high as to afford no proper climate, it would be officious to urge, and vain to expect any improvement, by turning up the soil. All that can be attempted with any prospect of success is, to bring water upon such land, where it is practicable, to meliorate the grass, as has been mentioned in a former Chapter. But on the skirts of hills, which consist for the most part of deep stiff land, with or without a mixture of moss, the prospect of advantage is certain; and whoever studies his own profit, will set about the cultivation of such land, in good earnest and without delay. If the surface be much broken with rocks and stones, which are difficult to be blown, these places ought to be planted; and wherever there are intersections of spouty or soft ground, small open drains should

should be made in a sloping direction, to conduct the water to a principal drain of this kind, where all the small ones ought to terminate, that the superfluous moisture may be collected and carried off in a rill, which otherwise spreads, and would destroy the plants. These drains are easily made, because it is unnecessary to have them deep, or broad, or to give them any covering. The land where this preparation is required is commonly the best soil in the field.

Where the surface is not broke, waste land may be brought to yield a better return by a different process. If the obstructions be few, the land tolerably dry, and the declination moderate, the speediest method of increasing its value is by the plough. Moor of a good body, with or without a mixture of moss, may be cultivated with every prospect of success in this manner. As a preparation for doing so, it ought to be liued plentifully two complete years, before the plough is put in, that the lime may mix intimately with the soil, and not tumble from the sward into the bottom of every furrow, during the operation of ploughing. If the manure remain three years on the sward, the soil becomes the more tender, the grass much richer, and the danger of any of the lime being lost much less. The plough must be strong; and the cattle yoked a-breast. Wherever hidden stones meet the plough, they ought to be turned up, or the place marked carefully, that they may be raised and carried off before the field be sown, as formerly suggested. In these situations the first crop of oats will seldom be so abundant as the second. Improvers of such land in the county of Perth, where many hundred acres are improved in some properties by this process, have frequently reaped six bolls from the acre.

Others

Others bring land of this description into cultivation by trenching, which completes the business at once, but is somewhat more expensive. When the stones are removed, the field is fit for receiving manure, and a crop of either corn or potatoes. This method, of bringing waste land into an improved state, has been followed for many years by the merchants of Glasgow, who discover great enterprise in any undertaking which occupies their attention.

Others begin the reduction of such land by planting potatoes in lazy-beds, which is universally the practice of the poor, since they can neither afford to wait immediate returns for the labour or for the manure. But this is by far the least complete improvement, because no part of the land is cleared of stones the first season, except the trenches, which is probably no more than a fourth part of the whole. Some of the stones may be discovered during the time of digging the potatoes, which it is extremely proper to remove in the course of the ensuing winter, that the land may be prepared for a crop of grain the following spring.

It hath been strenuously recommended by some farming gentlemen, and by several Surveyors of counties, to pare and burn all land in such a situation; nay, to reclaim all waste land whatever by burning the surface, in order to produce ashes for manure. I doubt much whether a thin soil may not lose more by diminishing the staple, than it will gain by the ashes; but where the soil has a deep body of earth, and a coarse, spritty, or otherwise matted surface, it can better afford to lose that part which is reduced to ashes, for the purpose of manure. These are the most common methods hitherto adopted for bringing into cultivation the skirts of hills, where the soil has a good body of earth;

earth ; and persons who are desirous of turning such wastes to the best account, may follow either of them that suits their circumstances and inclination.

The land, which has hitherto been brought into an arable state by the present generation, in the county of Inverness, has been for the most part, of that kind of strong bodied soil, taken notice of under this article. Much has been done in this way, by several gentlemen in the parish annexed to the county-town ; although the proportion of each be not great, the amount of the whole is very considerable, as appears from a letter written by one of the most sensible gentlemen in that country, which I did not think proper to abridge ; and therefore have inserted it in the Appendix, No. II. But the most distinguished improvements of waste ground are carried on by Mr. Fraser, the present proprietor of Belladrum, who has reclaimed from a state of barrenness 200 acres of land ; and by the late Mr. Davidson of Cantray, who had brought into cultivation no less than 500 acres.

On the property of Mr. Forbes of Culloden, near 100 families have been set down since 1745, who draw their chief subsistence from that barren extensive waste, where formerly not a hut was to be seen. Every colonist has his boundary marked out, his garden near his cottage, and several acres of moor set off to him, which he reclaims by trenching, or by planting potatoes for a first crop. From the produce of these lots, they keep a cow and a horse, and raise grain to maintain their families. This shows what may be done on this moor, where one-fourth is not yet allotted in this manner.

The Magistrates of Inverness very judiciously, some years ago, granted leases of several patches of
waste

waste land belonging to the burgh, which, when those leases expire, will produce a considerable revenue to the community.

In Strathispey, between four and five hundred acres have been lately reduced from heath to cultivation. But to have ascertained the number of acres reclaimed by each individual in a county of such vast extent, was beyond my power, because improvements of this nature appeared in many various places, where proper examples were set before the people; yet the vicinity of the county-town, and the Aird, justly claim the preference; and upon the whole, we may fairly conclude, that more than 4000 acres of waste land have been brought into cultivation in this county, within the last 20 years.

What has been lately done in this respect, by some gentlemen and others of the county, is not only a proof of what may be done, but an evidence that the attention of the country is turned to this object: and a happy presage it is, that their exertions will meet their due reward.

MOSS.

If the general complexion of soil proposed to be improved be moss, there is always a degree of moisture to be dreaded, which is unfriendly to vegetation. This inconvenience may partially be expected in waste land almost of every description, but a moss of considerable depth requires draining, as the first step to its being improved. In the vicinity of clay land, mosses are sometimes floated away, where a stream of sufficient strength can be got, in order to come at the rich soil below. This is the process originally suggested by the
fertile

fertile genius of the late Lord Kaimies, and successfully followed out by his son, the present proprietor of Blair Drummond, in improving the largest tract of low moss in the county of Perth, which is inhabited at present by more than 800 persons, where not a human being lived, or could be sustained some years ago. In some similar cases, the moss is not floated down by a current of water, but is improved only upon the surface. This is done, by cutting a large canal on that side of the moss next the fall, which is intended to carry the water from the field. Smaller ditches are cast, which form the field into ridges, and are more or less broad, as the moss happens to be more or less solid, and all terminating in the great drain. The field is next turned over with the spade; and if potatoes are to be a first crop, they are planted in lazy-beds across the ridges; but if the first crop is to be grain, the soil of the ridges is turned over long ways, or in the direction of the smaller drains.

Other improvers pare and burn the surface of moss, after having drained away the superfluous water; and with the manure obtained from the ashes raise a tolerable crop of grain. Others close up the smaller drains by means of faggots laid in the bottom, sometimes in the form of a St. Andrew's cross, or in other cases longitudinally and sloping, beginning always at the head of the drain, which is then covered.

The great point in reducing moss to corn land is, first to lay it so dry as to favour vegetation, but not so dry as to deprive the plants of the necessary moisture. This medium is to be carefully attended to; because the value of such soil is not unfrequently diminished by the last, as well as by the first of these causes. Moss is of such a porous consistency, that if deprived

deprived entirely of its natural sap, it will admit the drought farther down than the dews can reach.

I have seen moss several feet deep made to carry natural clover, and other fine grasses, with no other dressing but by draining and smoothing the surface, and giving a good covering of the scouring of ditches, and mud from the sides of roads, *nequid falsi dicere audeo—nequid veri non audeo*.

If the moss be of a fungous and porous consistency, every method should be used to compress it, and render it more compact. But my business is not to give rules, but to detail facts. Rules are left to books, professing to teach systems of agriculture.

Of all the different methods practised to overcome moss and to obtain a first crop, none appears to be so successful as potatoes. The soil expands so easily, that the root gets room to swell and attain its full size. The stem and leaves of the plant retain the dew better than any culmiferous plant; by which means more nourishment is procured, if the soil and season be dry, and the decomposition of the clods is promoted; and on the other hand, if the field be rather too much overcharged with water, the alleys along the sides of the beds help to draw what might prove injurious; and lastly, the planting and covering, and hoeing and digging of the crop, works the ground more perfectly into mould.

Whatever may have been the original colour and consistency of moss, yet by being wrought for a few years, it acquires the appearance, and some of the qualities of loam. It takes a long time, if ever it can possess the strength of loam, so as to bear a frequent return to white crops; but by judicious changes of turnips, potatoes, and grass, raised alternately with white crops,

crops, it may continue for any length of time in a productive state.

MOOR.

In many parts of the county which is the subject of this Report, there are low tracts of barren ground, which do not fall under any of the two former denominations of waste land. This soil has little earth: it is mostly gravel or sand, with a thin crust of moss on the surface, which has been produced by the annual falling of the leaves of heath, and any occasional decay of the wooden part of that plant. Moor is the most barren of all soils (except sand, which hardly can be called soil, but minute stones) and its natural sterility is such, that the heath it carries is, for the most part, dwarfish and short. It seldom requires draining, and as seldom can be flooded.

Those who set about the improving of such thin hard moors upon a large scale, generally fallow them for a whole year, ploughing and harrowing very frequently, and making every succeeding furrow across the former. By the time that this land has been reduced to some degree of tilth by these operations, it is ready for a crop of drilled turnips, which ought to be tried on such soil, for a first crop, rather than potatoes, because their long tap roots penetrate farther down, than any fibrous rooted plants, and are therefore less in danger of perishing for want of moisture, which is very scanty in this kind of ground; and because their foliage covers the ground more, and lasts longer than any other of the leguminous tribes, cultivated in this part of the world; so that their large and plentiful leaves protect the root from a scorching sun, or a withering

withering wind, and retain the dews of the night a long time, before they are exhaled the following day.

Spirited cultivators of barren moors are never discouraged by the failure of a first crop of turnips. They plant a second time with turnips the succeeding year. If these crops are eaten off where they grow, with folded sheep, the experiment never fails of success: and the most intelligent farmers always hold an opinion, which they see confirmed by experience, that whenever ground is brought to carry turnips, it is completely gained.

After all, it must be observed, that this mode of reducing moors is practicable by those farmers alone, who have some capital. The poor can follow no other way, than in the first instance to plant any land with potatoes, which they mean to bring into cultivation; yet when these people live under a landlord of humanity, he might employ his men and horses to fallow a piece of moor for his dependants, and leave the remainder of the labour to their own hands, which would be executed with ease and performed with alacrity.

In exploring the county of Inverness with any degree of attention, one who feels anxiety for the prosperity of that large division of this kingdom, must necessarily be affected with the sight of such immense tracts of uncultivated ground, which on all hands appear before him. These are not in small patches, according to the state of some other counties, but miles in succession of neglected land, which, by industry, might be rendered as productive as many of the fields that are under crop; nor are these barren grounds uniformly in the higher situations, which would argue the want of climate, as an apology for this neglect: we meet them adjacent to the houses of some of the greatest proprie-

proprietors; we meet them near the sea shore; we see them interspersed with small farms, which, in the occupation of former proprietors, had been tried by way of experiment; we meet them under the shelter of thriving plantations; we meet them surrounded or interspersed with patches of arable land; we find them not many feet above the level of great rivers or lakes; in short, these moors, which have been hitherto overlooked, are seen in every part of the shire, and partake in a great degree of the same circumstances, as to climate and exposure, with the cultivated lands, which for ages have been subjected to the plough.

The original inhabitants of all countries must have been few in number, and no doubt had confined their attention to the most favoured spots of their soil, and adopted the shortest process, with the least degree of labour, to raise subsistence for themselves; but as their numbers increased they must have extended their operations farther, and must have tried to raise corn from land, which their fathers had neglected. Thus the necessities of every generation dictated the propriety of making successive encroachments on the waste ground, as the only expedient to support an increasing population. We ought therefore to imitate our fathers in this respect: and as they must have reclaimed waste land from time to time, to support the increased population of the country; so must we reclaim waste land in our day, to meet the necessities occasioned by the increase of population in our time. Emigration upon a large scale, was unknown till of late years, in this part of the world. New modes of cultivation, more productive of sustenance, than what had been practised by the ancient husbandry, were equally unknown. Nothing therefore remains to be done, in order to

relieve the wants of the people, but to subdue more land by an increase of industry. This industry must in every age be progressive. It must keep pace in every generation with the increase of the people. If the industry of any country should become stationary, either the population must also become stationary, or some of the people must travel to some other countries for food.

In no part of my native country, that I ever saw, is there greater scope for an increase of industry than in the county of Inverness: and in no respect can the industry of the inhabitants be more profitable to the present race of proprietors and to their people: in no respect can it be more advantageous to the empire at large, or to that county under review, than by redeeming the vast extent of waste land, from its present state of barrenness. Manufactures are a valuable object of industry; commerce is a great source of wealth; a superior style of husbandry beautifies and enriches a country; but the improvement of waste land cherishes population, and is a nursery of the human race.

The improvement of waste land affords room for new families, fosters the natural desire of wedlock, and gives a spring and energy to the finest feelings of the human heart. Who can but rejoice, in indulging the hope of seeing sportive children and happy parents, where gloomy heath and howling wastes had been!

CHAP. XII.

IMPROVEMENTS.

NATURE has left the face of the earth in such a situation, as to require human labour to render it a more comfortable abode for man. In place of briars and thorns, and various kinds of wood, which the soil has been destined to produce, the human race must exert the strength and prudence they are endowed with, to improve its productions by the sweat of their brow. Hardly is any spot in any country naturally so fertile, but its fertility may be increased; and there are few places so barren, but their sterility may in some degree be lessened.

SECT. I.—DRAINING.

WHEN the surface is so uneven as that of the county of Inverness, the water, that lodges behind every hill, will break out along their face and at their base, in springs, and produce spouty ground, carrying sour grass in many of these declivities. In other countries, the flatness of the land, which prevents the water from going off, renders draining necessary: in this country, the quantity of rain that falls, and the retention of the water by means of hills and rocks, and

other obstructions, is the great cause which produces the effect of a wet soil. Draining is performed in various ways in the shire of Inverness, according to the taste, and opportunities of gentlemen, who practise this improvement; for the common ranks of tenantry have not hitherto attempted to clear their possessions of any superfluous water.

In Badenoch, the proportion which land requiring to be drained, bears to the remainder of the improvable soil, is greater than in any other district of the county. From the remarks formerly made on the river Spey, in this part of its course, one may easily perceive, that there is a very inviting field presented here, to both proprietors and farmers, for exerting all their industry, and expending some money with an infallible prospect of the most ample returns. The ordinary residence of the family of Gordon is so remote from this part of their property, that it cannot be expected this noble proprietor will find it convenient to engage in carrying on, in this district, such improvements as might require the eye of the owner of the land. Nevertheless, there is a possibility of their being executed; and if this were done, the family would ultimately reap the benefit. Let the most necessary drains be marked out by a surveyor acquainted with these matters, with the concurring approbation of the land-steward, and the possessor of each farm. The expense may be ascertained, according to the common rate of the price of labour in the country. Leave it optional to the tenant to execute these at his own expense, in the mean time, with an assurance of being indemnified at the end of his lease, to the full amount of their value to the farm, not exceeding their original expense; or the proprietor may pay, in the first instance, for executing

enting the work, taking the tenant bound to keep them in proper order, and charging the interest of the money thus expended, as an additional rent during the currency of a lease.

Large drains in flat land, by means of which much water is to be conveyed from a field, are generally left open. If these be five feet wide at the surface, and eighteen inches at the bottom, and three feet deep, the price of casting them is usually threepence the lineal yard, in a soil which yields easily to the spade. In Badenoch, Strathspey, and on the Earl of Moray's property in the lordship of Petty, much excellent land has been gained by such a manner of draining. On the property of Culduthil, a lake has been drained, that covered several acres of ground, which is now the most productive part of the farm. In Stratherie, eighteen inches have been drained off the surface of Loch Garth, which has recovered land about a mile long and one-fourth of a mile broad. The outlet of Loch Inch was opened twelve years ago, and several feet taken off; which prevents its re-gorging over much low land; but more ought to be done. A morass in the parish of Kirkhill, called the Moss of Canan, was drained upwards of sixty years ago by Lord Lovat, and some hundred acres recovered, which were rendered fit for corn and pasture; but during the forfeiture, the drains were neglected; pits were made by casting peats; and this valuable field is almost reduced to its original condition.

Where the current is little, and smaller drains deemed sufficient, they are closed up, that the operations of the plough may not be retarded, nor the field disfigured by these various intersections. In this case, some farmers close them in one way, and some in another.

Where flags can be easily got, two of them are set standing in opposite sides of the bottom of the drain, with their tops resting against each other, in the shape of an equilateral triangle. The sides are filled up, and the top of the flags is covered with small field stones; over these, sods are closely laid with the green side down, and the remaining vacuity filled up with earth. To prevent the swelling or accumulation of soil in the bottom, which might choke these drains, they are sometimes laid with horizontal flags in the bottom, before the upright flags, which rest against each other, are put down, and the drain is closed, as already mentioned.

Some improvers in other countries, lay the bottom of the drains with flags, then build both sides so high with small walls, as easily to contain all the water, and thereafter cover these walls with flags. When this is done, the vacuity above is covered up in the common way. This mode of executing close drains, seems to be the most effectual, and permanent, though not the least expensive.

In other cases, where flags are scarce, recourse is had to stones of any figure, if their size be such, as to leave openings sufficient to let the water in the drain filter through in the interstices betwixt them. To facilitate the progress of the water, the thinnest side of the first two rows of stone is put below, in order to give the opening at the bottom of the drain as much width as possible: above these, any field stones are poured in to fill up the ditch, so as to receive only some heath, juniper, broom, or furze, below the top-covering of earth. Much dependence is had on this kind of drain, because stones of that description are not so easily displaced as flags, and the openings be-
twixt

twixt them are larger than those of small field stones. The expense of such a drain in the county of Inverness is, for the most part, threepence the lineal yard. I greatly approve of laying heath or juniper above the stones in all covered drains, because these are the most durable of all the shrubs known in this country; they grow more slowly, and last longer under ground, than any other kind of brushwood; and therefore are the fittest to be used on the surface of mosses, in forming public roads, and in covering all subterraneous small currents of water.

At Achnagairn another kind of drain has been made. A small ditch is cast, about fourteen inches wide at the surface, four or six inches at the bottom; and about two and a half feet deep. The bottom of this ditch is crammed with brushwood; a little straw is thrown above, and a furrow turned in upon each side by the plough, which finishes the drain. The expense is about one penny the yard. Notice was formerly taken of a similar mode of draining moss; but faggots or truncheons were said to be used, in place of this brushwood. It is doubtful how far any drain, where the escape of the water depends on the durability of small wood, can be reckoned a permanent improvement: yet every attempt to increase the value of land, not only deserves to be taken notice of, but merits commendation.

This article shall be closed by two remarks. 1st, It is advisable to leave all drains open for some time, even though it be proposed that they shall be finished afterwards, by being covered up. During the time they are kept open, attention ought to be paid to the effect they have in drying the adjacent ground, that it may be known whether or not any more cuts be requi-

site to accomplish that end; it being much easier, and more effectual, to have all the draining of any spot of ground finished by one operation, than done partially and at different times. 2d, Where water is to be drawn off from the surface, the water itself, and the situation of the land, easily discover where the drain ought to begin, and the direction in which it should be carried; but in spouty land, where the water oozes out to the surface, after having passed, we know not how far below ground, it is not always so easy to discover where to begin to dig for the head of the drain. He who makes the head of his drain in the very place where the spring appears above ground, will find himself disappointed. The spring flows in many cases not far from the surface, before it breaks out above ground. It is proper therefore to dig so far above the mouth of the spring, as to catch it at least eighteen inches deep below the surface, whatever distance this may be from the place where it had naturally discovered itself. Every one knows that these drains ought to be cut obliquely, so as to intercept all the ramifications of the main spring; for if any of these be left, the draining is incomplete. The number of oblique drains, and the direction in which they ought to be carried, so as to terminate all in a principal drain, which may carry away the whole collective body of water, depends so much on the situation and extent of the ground, that this must be left to the judgment of the improver. No general directions can be given, which are applicable to every case,

SECT. II.—PARING AND BURNING.

THE improvement of land, by paring and burning, is not general in the county of Inverness; although much of the surface of the waste ground consists of a strong coarse sward, and might be a very proper subject for this operation. The injudicious use of this mode of extending the improvement of land, has brought it into discredit. The avarice of men, in this instance, as in many others, defeats its own purpose. Calcareous manures stimulate land to throw up great crops; and when a farmer goes on to sow a succession of scourging crops, after having manured with ashes, he sees his land exhausted to such a degree, that nothing can grow for several years. The consequence of this management is, that the practice of paring and burning is blamed, while his own want of judgment, and his avarice, are in the fault.

A very clear proof of the success and advantage of this method of improving land, the inhabitants upon the coast in that country have before their eyes. Mr. Fraser of Achinagairn, in the parish of Kirkhill, embanked the clay ground of his farm of Grome, which was liable to be overflowed by the sea at spring-tides. The land redeemed by this embankment was twenty acres, which, being drained by open ditches, was partly ploughed, and partly pared where the plough could not be used. The sods thus pared off were burnt; which was a work of greater difficulty than burning mossy ground. The ashes were spread on the part of the field that was pared, and the whole was sown with wheat in October. The produce was about eight bolls upon the acre, of excellent grain.

The

The account of the first crop stands thus, including the expense of the embankment :

Field, Dr.

To 905 clls of embankment, at 4 <i>d.</i> per ell, £. 15	1	8
To 180 roods of ditching, at 11 <i>d.</i> per rood,	8	5 0
To paring and burning 15 acres, at 1 <i>l.</i> 14 <i>s.</i> 8 <i>d.</i>	26	0 0
To 13 bolls seed, at 1 <i>l.</i> 1 <i>s.</i>	13	13 0
	£. 69	19 8

Produce, Cr.

By 160 bolls of wheat, at 1 <i>l.</i> 10 <i>s.</i>	£. 240	0 0
Balance in favour of the improvement,	£. 177	0 4

Even supposing that the wheat had brought no more per boll than the seed cost, the balance in favour of the undertaking is 105*l.* 4*d.* The five unpared acres were manured with dung from the farm-yard, and the expense of ploughing is not taken into the account; but these two items are overbalanced by the improved state of the land for carrying succeeding crops.

In making trials of paring and burning the surface of moss, the expense of burning is much less than it was in the experiment at Grome, because the sods require very little drying before they are set on fire; and little attendance is requisite afterwards, except throwing on more sods occasionally.

Where the extent of waste land is so immense, and the varieties of it are so many, every method ought to be tried to bring it into cultivation. The scarcity of manure, which is so much complained of in the shire of Inverness, may be remedied in a great degree, by the ashes produced from paring and burning; and while
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my opinion is perhaps singular, in disapproving of this mode of bringing into tillage, shallow moors, which consist only of a thin stratum of moss with a subsoil of gravel or sand, I earnestly recommend the practice of paring and burning all strong, stubborn, and deep soils in waste land, which can afford plenty of ashes, without diminishing too much the staple of the soil.

Let the whole ashes, by all means, be ploughed in before they get rain, or let the heaps be carefully covered, to keep them dry until it be convenient to use the plough. This is a manure, in the power of both poor and rich to command; and while it stimulates with great effect, it neither is chargeable with a distant carriage nor a great outlay of money; its only expense is some labour, upon which the lower orders of people, in the county of Inverness, do not always put much value; and they seem to be already very expert in peeling the surface of their ground for other purposes.

It is perhaps time enough to give precautions against the abuse of paring and burning, when the practice becomes more general. But while the proprietors of landed estates ought to lead the way, in this and in all other improvements, they should beware of allowing the land to be exhausted by a succession of white crops, after applying the ashes, before it be laid down in grass. They ought also to beware of allowing paring and burning too frequently to be repeated on the same field, which few soils can bear without being injured.

The apology offered by some of the most sensible men in the county, to screen their countrymen from reproach, for sitting so long in indolent slothfulness, while such vast tracts of improvable land are lying waste on all hands around them, was the want of manure.

nure. This is a serious want indeed, especially to the poor; and every man must commiserate their inability to purchase lime at the shore, or to carry it into the interior. But teach them to lay their mossy ground dry by draining, and then to burn the surface thereof; teach them to preserve and lay on the ashes, when they have dug up a little of the subsoil to be incorporated with these ashes. This is a manure to be found in all places, and by all ranks of men. Let not therefore the distance, nor want of manure, be substituted any longer as an apology for indolence, to prevent the improvement of the immense fields of waste land in the county of Inverness.

SECT. III.—EMBANKING.

In the last Section, mention was made of the embankment at Grome, in the Aird, which was composed wholly of clay soil, without the aid of any other materials. A ditch is cast nine feet wide and two feet deep, and these eighteen cubical feet of earth are formed into a mound, on the side next the sea, whose inside is nearly perpendicular, and four feet high above the surface; the outside slopes in an angle of forty-five degrees with the horizon. In constructing this embankment, the green side of the turf was laid regularly on the slope, and beat down with mallets, to make the sods incorporate the sooner with the loose earth underneath, and to cement the seams of the surface more firmly. The expense was fourpence the lineal yard, as formerly mentioned.

Major Fraser of Newton, has formed an embankment on the same principles, which is a mile long.

At

At Fingask and Warrenfield, similar works have been erected, to keep off the sea, in the Firth of Beaully; by which means, about a hundred and forty acres of excellent land are recovered from the ocean.

At Seabank, near Inverness; at Corrimony; in some places of Strathnairn, small mounds have been erected. On the banks of the Dulnean, of the Nethy, and of the Spey, several long embankments have been made in different places, to resist the inundations of these rivers, which are very destructive to the crops of hay and grain, where this precaution is neglected.

The first defence of this kind, which probably had ever been opposed to the overflow of the Spey, was built in the flat below the inn at Pitmain, by Mr. John McLean, when he possessed that place from the family of Gordon. Having been in that country about thirty-seven years ago, and being desirous to visit every curiosity, whether in the line of antiquity or improvement, I traversed this long embankment, which was all composed of earth, built up nearly in the form of the segment of a circle, somewhat flattened on the side next the river, to resist the pressure of the stream with more ease, by rendering it more gradual. Mr. McLean had been abroad in his youth, and probably had learned a lesson of embanking, from the dykes he saw on the Maese, and other rivers, in the low countries of Europe.

Since that period other works of the same kind, and on the same principle, have been made at Cluny, at Belleville, and at Dell, in the same country, by which large tracts of rich meadow, and arable land, are preserved from the ravages of that river, which is reputed the most rapid in Scotland. The Rev. Mr. John Anderson, minister at Kingussie, showed me his embankment at Dell, a beautiful farm, the property of Mr.

McPherson

M^rPherson of Invereshie, which is two thousand four hundred ells in length (each ell being thirty-seven inches). By means of this mound, that gentleman has brought into culture fifty acres of rich land, which had formerly been a morass, or covered with brushwood. His own memorandum of improvements is subjoined in a note, with much satisfaction, to show what may and ought to be done in that country*. Several other places in Badenoch are in the same predicament, and equally susceptible of improvement. The farm of Gordon-hall, the property of the Duke of Gordon, has more flat land than any of these, which in many places produces at present little else except willows, allers, sprits, and rushes growing in noisome swamps, where the grass is either so sour that no cattle will taste it, or where the surface is so soft that they dare not tread. The advance of money, in carrying on the requisite improvements in this and other places, is no doubt considerable, but the land itself will in a short time refund every shilling; after which the annual returns will be clear gain.

Dell, 28th August, 1804.

* Since Whitsunday, 1790, I have completed on the farm of Dell, a steeple of farm-offices; nearly four thousand ells of stone dyke; upwards of four thousand yards of open ditch for draining, six feet in breadth, and a part of it of a great depth, as it was requisite to carry off not only the surface-water, but also to under-drain, to carry off springs. I have also finished about twelve hundred ells of a covered drain filled with stones to about the depth of thirty inches, the ditch, on an average, being five feet broad; have erected an embankment of two thousand four hundred ells, to prevent the overflow of the rivers that bound the farm, and have brought into culture fifty acres of good land, that had formerly been a morass, or covered with brushwood, and cairns of stones.

(Signed) J. ANDERSON.

To the Rev. Dr. Robertson, Gallander.

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The expense of embanking may be provided for in three ways; either by granting a lease of such duration, that the tenant may indemnify himself for the money thus advanced; or, as was said above, by taking the tenant bound to pay interest for the landlord's outlay of money; or by refunding the possessor at the expiration of his lease. At all events, in a country where there is so great a capability of improving such an extent of land, by preventing these destructive inundations, and of lessening the baneful effects of mildews, which are uniformly attracted by great bodies of water, there is every reason to expect, that the examples already before their eyes, and their own good sense, will stimulate the other proprietors and tenants in Badenoch, to engage in operations, which would promote their own and their country's interest in such an eminent degree.

SECT. IV.—TRENCHING.

THIS subject has been treated at some length, in the Section which refers to barren ground. While the poor must content themselves with the slow, but progressive improvement of wastes, by planting potatoes with the spade, persons of capital will find their account in employing labourers, even at the expense of four pounds the acre, to reduce such land to cultivation.

In the district of the Aird, where various improvements are carried on with spirit, the trenching of waste land has been more practised than any where else within the bounds of the county; at Belladrum alone, eight hundred pounds have been laid out in trenching coarse ground; at Achnagairn, and some other places, several

several acres are trenched every year. Mr. M'Intosh of Holm, is a successful improver in this respect. At Dell, Farraline, and Gortlec, much is done. Fourteen acres of waste ground had been newly trenched at Gortlec, when I visited Strathcric in autumn 1804, at the expense of one shilling for every six yards square, or one shilling and sixpence, where much pick-work was necessary, and one penny the inch for boring the stones which required to be blown with powder. At the Mains of Ardersier, Mr. Macpherson has improved land by trenching, and raised it to the value of twenty-five shillings the acre annually, which originally was only reckoned worth two shillings. Upon the supposition that this operation cost that gentleman, or Lord Cawdor, the proprietor, four pounds the acre, here is the return of twenty-one per cent. per annum, for that money. The estate of Castray stands high in the rank of improvement, as to trenching, and every other amelioration of barren land. There is hardly any species of improvement, in which that place does not appear pre-eminent.

SECT. V.—MANURING.

IN all the Highland counties of Scotland, much attention has been paid to the increase of manure, since the introduction of potatoes upon a large scale. The favourite crop formerly was barley; but ever since the potatoe came to be understood as superior in value, by affording more food from the same extent of ground, the eagerness with which manure is collected for its cultivation, cannot well be conceived by persons who are strangers to that part of the empire. No dung is offered

offered for sale in all the shire of Inverness, except that which is collected from the streets of the county-town; and therefore every person, from the poorest cottager who has a patch of land for potatoes, to the highest rank of farmers, must depend on his own industry, to increase his dunghill, as the means of securing a future crop of any value.

Composts are used in every district, and by persons of all descriptions. In some places, lime, moss, earth, and sea-ware, are mixed together. In other places, remote from the sea, the compost is made of lime, moss, ferns, and common dung: these substances are laid together about Lammas, in alternate strata, and the dunghill in many cases is increased, by the more substantial farmers, to a great size; the whole is turned over before winter, to increase the fermentation, and to incorporate the different substances more intimately together.

It appeared singular, that in one district, sand was mentioned as an ingredient in their composts. The cohesion of clay is corrected indeed by sand, and the coldness and want of solidity in moss; but in any other cases, it does not seem to be so beneficial as to reward the expense of digging and carrying it to a field.

Upon the West Coast, beside these composts, some of the gentlemen import shell-sand from Loch Moidart and other places, which is accounted equal to lime, as its influence remains in the ground six or seven years, although, like other stimulating manures, its effects are more powerful during the first two or three. When laid on grass ground for a top-dressing, the surface is not only enriched, but beautified in a high degree, by a close carpet of daisies and white clover. The price is

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four shillings the ton, when carried by water to any considerable distance; in some places it is cheaper.

When I was at Arasaig, large heaps of this valuable manure were lying at the shore, and the farmers busily employed in carrying it away with carts, from a vessel which was plying betwixt the harbour and a large bank of shell sand, which lay dry at low water, in another creek about a mile from the port. This bank had the appearance of a bleach-field, where the linen is about half white. The expense in such situations is a mere trifle, compared to its value; nothing but the freight of the vessel, whether large or small. The depth of the bank at Arasaig had never been ascertained, because the inhabitants have not hitherto penetrated to the bottom; but in the Isle of Bute, the shell sand is twelve feet deep in some places. In various parts of the Hebrides, there are banks of great magnitude, but more distant from the main-land than those at Loch Moidart and Arasaig.

As this manure has much of the qualities, it has also much of the appearance of lime. The particles are of very irregular sizes and shapes, resembling pounded or water-worn shells, the largest of them extremely hard to the touch, and not easily reduced to powder in the hand, though no doubt they dissolve in the earth. It is owing to this circumstance of the shells having the hardness and the appearance of sand, that the substance has got the name of shell-sand*; and not from any mixture whatever of common sand being found along with it, in any place, so far as I could learn.

* If shell-sand were pulverized by a heavy roller, on a hard smooth surface, its effects would be earlier produced.—*Sir J. Murray, of Laurick.*

Lime has been discovered in many parts of the county, but it has not been hitherto used in the cultivation of the soil, in proportion to its importance as a manure. The causes of this neglect seem to be, the want of fuel, the inattention of the common tenantry, and in many places, the precarious tenure by which the people hold their farms; but no fuel is scarce except coals: and lime is plentifully burnt in many countries by peats, and wood. The lower class of farmers must have examples set before them, to excite their industry, and leases in their pockets to ensure the fruits of their labour.

It was pleasant to observe, on the estate of Urquhart, that the lime had both been quarried, and given free of all cost, except carriage, by Sir James Grant, to his tenants in that district, from the quarry at Gartaly. The effects of this bounty, which were visible on the face of that country by the appearance of the crop, will ultimately redound to the benefit, as it now does to the honour, of the generous proprietor.

In the vicinity of Inverness, and along the Coast, the lime is generally imported from Sunderland, and sold at the shore for 4s. the boll, of Linlithgow barley measure.

No regular beds of real marl have been discovered in all the county, according to any information I could obtain. Marl is supposed to be in Loch Meikley, on the property of Mr. Grant of Corrimony, and in some other places; but the trials have not been made with sufficient accuracy, to warrant any definite conclusion in this respect. In various parts of the county, a substance was dug out of pits, which the farmers added to their compost mixtures, and to which they gave the name of marl, but it appeared to be a kind of till, and

had none of the distinguishing qualities of real marl. It is not to be supposed that the use of this substance would be so general, nor persevered in for any length of time, unless its effects on the soil were found to be beneficial. It has at least the recommendation of being fresh virgin soil; and when applied to light sand, that has been extremely loosened by repeated ploughings, may contribute to render that land more compact, more retentive of rain and dew, and therefore more fertile.

The scarcity of stimulating manure, is the great complaint of the most intelligent improvers in the shire of Inverness. The quantity of dung preserved from their cattle, is by far less in many places, since the sheep system was adopted on the present scale. Their cows are fewer in number, and from the greatest flocks of sheep no manure can be saved, or applied to the arable land; and even the few cows they have, are seldom confined in folds over night, in the summer and autumn, to enrich the lea-ground, according to the ancient practice; which was at one time so universal. The folding of cattle was no doubt injurious to the animal, but it increased the quantity of dung, applied to the arable ground, and consequently the quantity of grain: and the numbers of the inhabitants of a country, are generally proportioned to the quantity of food provided for their sustenance.

Where such extensive tracts of waste land remain to be cultivated, and such a visible decrease of animal dung has taken place, it is much to be regretted that other manure is so difficult to be procured; nevertheless, judgment, attention, and perseverance, will overcome many difficulties. When a true system of rational farming shall become general; when the use of green crops is properly understood by the lower class
of

of tenants; when they learn to sow some of their arable ground with grass-seeds, and to apply part of the dung they have, proportionally and annually, in planting potatoes in waste land; and when they shall also avail themselves of the bounty of Heaven, in spreading the water of their innumerable rills over the face of their waste moors; the want of foreign manure may be regretted, but it will not disable them from improving; it may retard their progress, but will not make them entirely stationary; it may incommode, but cannot defeat their purposes.

SECT. VI.—WEEDING.

EXCEPTING potatoes, or turnips, or flax, hardly any other crop is weeded by the hand or hoe. Potatoes are so valuable, that even the most indolent, endeavour to keep them clean, and dress them up by the application of fresh earth. Turnips are seldom cultivated by any, except such persons as both understand and practise agriculture in a superior style, and who are desirous to do justice to every crop they raise. Lint has been weeded by poor and rich, time immemorial; and it is probable, that at one period no other crop, in the Highlands of Scotland, had a single weed pulled from the ground where it grew. The highly improved state of the agriculture of the Romans, may be inferred from this circumstance, that they weeded all their grain with uncommon care.

If in any case the flax is not weeded, that happens on the possessions of the best farmers, because their land is so free of weeds, by a regular rotation of crops.

ping, that there is no necessity for this operation. When flax is sown in land that is clean, and in good condition, all that is generally done is, to roll the ground, if it be naturally dry, to render it more retentive of moisture.

In some instances, thistles are pulled up by the roots, partly to clean the corns, and partly to feed horses, during the season of carrying home the fuel. Docks, and other large weeds, as already taken notice of, are cut out by some farmers with a crooked instrument, resembling a small hedge-bill, with a wooden handle.

In a weak soil, which has been poached by constant tillage, a variety of small weeds grow up, particularly among the barley crop, which become more numerous by the application of dung. Nothing will extirpate these, except a fallow, and resting the ground.

The wild oat, which has been already described, infests many districts, both in this county and others. This troublesome neighbour requires repeated fallowings, before he can be removed; but wherever the land has been under proper management, for a number of years, there are few wild oats.

SECT. VII.—WATERING.

THE practice of watering land, by means of human industry, does not appear to have ever attracted the attention of the inhabitants of Inverness-shire; and yet few parts of the kingdom are better adapted to that species of improvement. The extraordinary fertility of the extensive and level fields in Badenoch, Strathglas, and elsewhere, which are occasionally flooded by the

the rivers of these countries, and the quantity of enriching sediment left behind, might have taught the people to imitate, by industry, the example which Nature so frequently sets before their eyes, of ameliorating the condition of their soil. Not only this, but the green tracts in every little hollow, down the face of the hills, and at the confluence of the rivulets on the little flats below, might in every district, convince even the least discerning, of the enriching qualities of water, by comparing the surface in these situations, to the barren heath on either hand around them. No other cause can be assigned for this difference, but the influence of water. But the generality of mankind dose on through life, and never inquire, or consider the causes of many appearances they see every day around them. The more frequent these natural appearances, the less they are attended to, because they excite no alarm or surprise. They have always, from their infancy, been accustomed to observe these green tracts, in the hollows on the face of hills, among heath, and took it for granted that they were created green, when the rest was created under heath. No species of manure is so cheap, so plentiful, nor so easy to be commanded; and the value of it is still higher enhanced, by its wonderful effects on every kind of soil, where the surface is entire: let any man take a glance along the banks of a river or brook, which runs smoothly through the most barren tract of country, and overflows its banks in rainy weather: the waving line, by which the enriched green ground is separated from the adjacent barren waste, marks exactly the boundary of the inundations, by which one part of the soil has been rendered more productive than the other. Innumerable instances of this phenomenon might be pointed out,

within the county under review, which are so many arguments in favour of irrigation. But the remarks which were made upon this subject, in the Chapter on reclaiming Waste Land, supersede the necessity of going into a longer discussion in this place,

CHAP. XIII.

LIVE STOCK.

THE first dawn of improvement in any country, is the predilection of the people, for some new species of cattle, or some new species of plants. To improve all of them that are suited to their climate, evinces a high degree of civilization. Egypt was famous for its linen, before it was famous for any thing else. The Arab, from the most remote antiquity, had almost adored, and continues still to idolize his horse. One people cultivate more rice; another more wheat; one nation is distinguished for its breed of sheep; another for its superior cattle. The Highlands and Islands of Inverness-shire have long been distinguished for their breed of cattle.

SECT. I.—CATTLE,

WHETHER the breed of cattle in the Isle of Skye, was brought to its present perfection by gradual improvements of the ancient breed, or has been introduced into the Highlands of Scotland at some remote period, is immaterial, and not perhaps very easy to be determined. The tradition is in favour of the latter supposition. Be that as it may, the present breed is highly

highly esteemed, and eagerly propagated in the adjacent countries. The shape, the pile, the ease of fattening, the weight of beef on the same bone, and the quality of the meat, are all superior to any thing of the kind known in Britain, perhaps in the world.

In place of giving any other description of a handsome Highland cow, I shall here quote the marks given by the elegant writer of a late poem, entitled *The Grampians Desolate**. "A cow of the Skye, or Kintail breed, is a remarkably handsome animal; it carries its head erect; which gives it a deer-like air, peculiar to the cattle of these districts: besides a straight thick back; deep in the rib, elevated front, crest, and neck; small blue or clear yellow horns, tipped with black, and sharp pointed; low stature; a thick curled pile, black or dark brown, and large bushy tail."—This description may be deemed unnecessary to any person in the Highlands, who is acquainted with this breed; but it may be interesting to gentlemen in the southern parts of Britain, who wish to introduce the best feeders and the most delicate beef upon their pastures.

Formerly, bulls of a bay or light red colour were preferred; but now the jet black, or dark brown, striped with alternate shades of deeper and lighter brown, are in greatest estimation. The cause of this change in the choice of the colour of bulls, is said to be owing to a desire of preserving a distinction betwixt the Highland cattle and the Irish, the latter being generally of a light brown, or red pile. As to the management of cattle stocks, my information was, that, no more than one calf is commonly reared upon the milk of two

* Mr. Alexander Campbell, author of various publications.

cows, when they are in the natural possession of the tacksman of a farm, and owner of the cattle; but in other cases, parcels of cows are frequently let out to bow-men, who get possession of the tacksman's farm, and of his stock of cattle. These bow-men are confidential married servants, who trade with this species of their master's property, upon stipulated conditions. They are generally bound to produce one calf, and one stone of butter, and two stones of cheese annually; for every milch cow entrusted to their management; or one calf; and 40*s.* or 50*s.* according to the quality of the cattle, as may be agreed upon. All the surplus produce of the dairy is allowed for victuals and wages. In this manner young married persons, who are active, but who have not had a stock sufficient, before their marriage, to enable them to take a farm, by proper attention earn in a few years, a competency, by the aid of which they at length become possessed of a farm, and cattle of their own.

These Highland cattle yield only four, or five, and rarely six Scots pints of milk (*i. e.* nearly so many half English gallons) daily; while the cows in the Lowlands give double that quantity. The first is, however, by far the richest milk.

The manner of disposing of their dry cows, or young bullocks, is somewhat curious. When the drovers, from the South and interior of Scotland, make their appearance in the Highlands, which always happens during the latter end of April, or the beginning of May, they give intimation at the churches, that upon a particular day, and in a central place of the district, they are ready to purchase cattle from any who offer them for sale. This is a most important and anxious time, to both buyers and sellers. The price of this commodity,

dity, like all others, is regulated by the demand. The farmers have only two ways of judging of the demand; first, by the number of drovers that appear in the country; and, secondly, by epistolary correspondence with persons in the South, who have their confidence. The drovers are of two descriptions: either those who buy by commission, for persons of capital, who being diffident of their own skill, or averse from fatigue, choose to remain at home; or those who purchase cattle on their own account. Much address is used on both sides, to feel the pulse of the market at these parochial meetings, before the price for the season be mutually settled; and it may happen, that many such small trysts or meetings take place in different parts of the Highlands, before the price be finally determined. Their anxiety on both sides is sometimes so great, that the cattle are given away upon a conditional contract; that if the price rises within a limited time, the seller will receive so much more; but if the lean cattle fall in value, the drover will get a deduction. Ready money is generally given for the cattle; and this is the season for the banks to circulate their paper money.

These petty markets, in the Highlands, commence at the period above-mentioned, and the cattle are moved as soon as they can bear the fatigue of travelling, that they may be put as early as possible on the Southern pastures. When the demand from the South continues brisk, this sort of trade is carried on with little or no interruption, from May till October.

The diseases of Highland cattle are neither many nor fatal. To accidents they are indeed frequently exposed, from the deep morasses they traverse, and the steep and craggy mountains they have to climb. Torrents in the higher vallies sometimes carry them down, when

when passing from one part of their pasture to another; but the most fatal mischances of all, are severe and bleak springs, and scarcity of provender at that critical season.

In woodland pastures, and in dry summers, when the rivulets become dry, and water cannot be regularly had, the bloody flux, or red water, as it is called, is not uncommon, especially among cattle not bred and reared upon the farms liable to this disease. Under this malady the body of the animal is in a raging fever; it eats almost nothing; it ceases to chew the cud; and passes blood with the urine and dung. At the beginning of the disease bleeding is often found salutary. Cold spring water poured down its throat has a good effect. Butter-milk, being of a cooling nature, is sometimes given; and a decoction of nettles with a handful of salt, has been tried with success.

Through all Lochaber, in the districts along the West Coast, and northward to the confines of Ross-shire, the real Highland breed of cows, such as those in the Isle of Skye, are reared. Towards the interior of the county the cattle are of a baser kind, and generally a mixed or cross breed, except in some parts of Badenoch, where a preference is given to the real Highland cattle. Into this province of the county the Galloway species of cattle was introduced about twenty-six years ago, by Mr. Mitchel at Gordon-hall. In the countries situated on the Murray and Beaully Firths, the cattle are heavier, and better milkers, than the Highland cows. In good pastures these fatten to between four and six hundred weight, while the Highland cows seldom exceed two-thirds. The reason given in Strathspey, for preferring a larger and more docile kind of cattle, is not altogether on account of the superior quantity

tity of their milk, but for the purpose of rearing oxen for the draught. Oxen were used formerly in the Aird; but have been discontinued since grass became so valuable in the Highland glens, by the introduction of sheep, that the farmers could not find pasture for them there, at a moderate price, during summer.

These are only outlines of the qualities and denominations of cattle, in general to be met with in this county, and must be understood with many exceptions. The real fact is, that the poorer ranks of tenants are, hardly in any place, very solicitous about the distinguishing characteristics of the beasts they are possessed of; while the richer farmers, and gentlemen, are uncommonly nice and tasteful in their choice of cattle. A person of distinction in the Highlands, boasts of his breed of cows, and shows his fold, with the same exultation that a virtuoso displays his cabinet of curiosities*.

SECT. II.—SHEEP AND GOATS.

THERE is hardly a farmer or cottager, in the higher or lower districts of the county, who does not endeavour to have some sheep. In the bottom of Strathnairn, in the Aird, in the vicinity of Inverness, and of Fort George, their numbers are not indeed great, except what are confined in regular enclosures; but in the Highland districts they abound; and are daily abounding more and more.

By the Manuscript which the Board of Agriculture put into my hands, it appears that about ten years ago, this county contained 25,000 sheep. There is little

* When cattle are likely to burst with clover, they are effectually cured, by putting three hen-egg shells full of tar down their throat.

doubt,

doubt, that by the enlargement of farms, and the avidity for sheep-stocks, they have greatly increased since that period; and may at this time be set down at 50,000 or more, of all kinds. The old indigenous sheep, which are small, fine woolled, and altogether white, are still very numerous.

The Linton breed, or those with black legs and faces, are the most prevalent. Stocks of Cheviot sheep are gaining ground, because their wool is much finer, and their carcasses equally large with the Linton breed. The only objection to the Cheviot is now found, by experience, to be in a great degree imaginary. At first it was thought that they could not endure the cold of a northern climate and a stormy climate; but flocks of these have nevertheless made their appearance in various parts of the county, and particularly a very numerous stock of them was introduced some years ago into Glenqueich, by Mr. Gillespie; another into Coirghearnac, by Mr. Oliver; and a third more lately, into the bracken of Badenoch, by Messrs. M'Pherson, and Mitchel; and if they thrive in these situations, there is no place in Britain where they may not be tried, with assurance of success. The two former gentlemen very obligingly sent me a written account of their Cheviot flocks; which it is proper to lay before the public; and the other two gentlemen reported verbally, that they had not tried them for so many seasons, as to be entitled to give, what might be deemed a conclusive opinion on this subject; but added at the same time, they had no doubt that the Cheviot flock in their possession would do well. Mr. Oliver's and Mr. Gillespie's communications on this subject, which will be found in the Appendix, No. IV. and No. V. are laid fairly before the reader, without any alteration. Yet I must

must say, that the shade of difference, which appears betwixt these gentlemen, refers chiefly to one point, viz. the delicacy of the Cheviot lambs when newly dropt; because they have less wool in that state, than the black-faced lambs. It is well known to every person in the least acquainted with sheep, that the lambs of all kinds require the utmost attention, at this critical season, not only to protect them from the incidental rigor of a variable climate, but from the ravages of birds and beasts of prey, until they be some weeks old, and have acquired strength, and can, with the help of their dams, do a little for their own preservation. Every intelligent and careful shepherd keeps his sheep and lambs in the warmest situation he can procure, in the immediate vicinity of his own abode, and at all hours under his own eye, except in the dead of night; which vigilance of his is much assisted by the instinct of his dog, and that of the dams themselves; which never desert the best sheltered place during the lambing season, unless compelled to do so by rude and frequent annoyance.

The preference hitherto given to the Linton sheep, from a supposition of their superior hardiness, may probably subside, when proper attention is paid to the quality and quantity of the wool of all the three kinds, to be met with at present in the county of Inverness and elsewhere. The result of my information with respect to each is this, 1st, That sheep of the old breed of the country, are equally hardy with any kind whatever, when treated in the same manner, and allowed to roam at large, without being confined in folds and cots, as formerly; their wool is finer, and double in value at least of that of the black-faced; their mutton of equal quantities; richer, and better flavoured; but they have
less

less wool, and are smaller in size. The Cheviot-sheep are of equal weight with the Linton; their mutton fully as good in all respects; their wool equally abundant, and much finer, being nearly of the same quality with that of the indigenous breed.

To a person who had his fortune embarked, or his fortune to make, by having made choice of any one of these breeds for stocking his ground, it is not impossible, but his judgment would be so far warped by his interest, that he would endeavour to discourage other adventurers from adopting the very same plan of making rich, by which himself expected to succeed; but to a person altogether unbiassed, and who had not at all engaged in the sheep system, the judgment formed of the ultimate value and the comparative circumstances of all these kinds of sheep, would perhaps be the following: that by the time the sheep system has farther increased, and the sale of wool becomes heavy, the market being glutted with that article, the coarse wool of the Linton breed, which at present brings hardly the half of the price of the other two common kinds, will then be unsaleable almost at any price.

Were we to have our Bakewells, and our Culleys, to improve the old breed of sheep, there is every probability that they might be rendered more valuable, taking all circumstances into the account, than any species of that animal hitherto tried on the mountains of this country. By the notes taken in Badenoch, I find this improvement of the native breed is going on. It ought to be persevered in till the experiment be complete, and the result fairly and fully known. It is the pasture that finally determines the size of all animals. You may form their shape by crossing, according to your taste; and this figure may be tolerably perma-

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ment; but though you attempt to enlarge the size of animals, by crossing with a larger breed, your pasture will bring down their bulk to the original standard peculiar to the quality of that pasture.

What occurred to me, as the safest and most effectual method of improving a breed of sheep, in consequence of every information which could be procured upon that subject, has been laid before the public, about ten years ago, in the Report of the Agriculture of Perthshire. The various diseases to which these creatures are liable, were mentioned in that publication, and some remedies suggested. An account was there given, of the substance used in smearing, and the manner of laying it on; how to provide shelter and food for them in stormy weather, and some other remarks relative to this most useful animal.

In the year 1796, lambs of the black-faced breed sold at six or seven shillings; in the year 1803, they sold for nine or ten shillings; and in some cases they brought a higher price. In the year 1804, they fell two shillings. Sheep of all ages have varied in the same proportion.

The progressive increase in the price of sheep, and of every other article, is an evidence not of real intrinsic worth, but of the decrease of the value of money; for, a sheep will not afford more food now, than one of the same weight did at any former period. About sixty years ago, full grown wethers sold for one *third* less money than the lambs of the present day. Fifty years back, the price of an ordinary sheep was the same as of a lamb at present. The causes and consequences of this decrease of the value of money might be investigated, were it not foreign to the object of this Report. It affects various classes of men very differently. To
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the landed and commercial interests of the country this is a matter of pure indifference, or it is rather in their favour; for if land is lett now at five or sixfold the rent it brought sixty years ago, the balance is on the side of the proprietor, should he pay for his mutton four times its former price*.

The situation of the merchant is equally favourable, owing to the extension of trade, and the rise on his commodities; but this rapid and excessive decrease in the value of money, is to be deeply deplored by annuitants of every denomination.

When the exigencies of the State require extraordinary supplies, no good subject will grudge his mite. Yet these burdens ought to be imposed upon all classes of men with as much equity as possible. The taxes levied through the medium of the Excise and Customs, are, for the most part, optional, and voluntary to the person who pays them. But when individuals are called upon to contribute according to their wealth, every possible degree of fairness is requisite, because in this case all option is excluded. Whenever a person of small property is taxed equally with another of greater property, the tax is unjust; the operation of the tax is evidently at variance with its principle. This is the radical injustice of the tax upon income; it professes to levy money from the lieges, according to their wealth, or their ability to pay; which it does *not*, while one person, whose income is an annuity of any

* There is no doubt that the value of money has decreased; but does not the price of labour keep pace with the value of money? Does not a day-labourer get *more money*, without working any *additional hours*? Are landed proprietors enriched, by paying from 150 to 200 fold more for their wine than it sold for 250 years ago? See Act of Parliament, 1st July, 1551.—*Sir John M. Murray, Bart.*

particular amount, is assessed equally with another whose income is the same, but arises from land, from the stocks, or from trade. The former enjoys only the annual rent of a fund, while the latter possesses both the fund itself and the annual rent it produces. These two persons are surely not equally rich, yet the tax upon income treats them as such, and in so doing, is capricious. If a person lends ten thousand pounds to his neighbour, or vests it in land, or in the national funds, or in trade, is he not a more wealthy man than him, who has nothing but an annuity of five hundred a year? Nay, is not the wealth of these extremely unequal?—and therefore the rule is extremely unfair, by which they pay equally: their wealth is exactly in the proportion of *twenty* to *one*, and yet the law regulating the tax upon property, levies from them the same sum*.

* The inquisitorial nature of this tax must ever make it odious; but it has been considered unavoidable, because it is said that no better has been suggested; and perhaps the only view in which notice of it falls within the scope of the learned Doctor's work, is the inequality with which it bears upon any particular class, whenever he can make that appear, as in the case of the landed or agricultural interest, compared with the monied interest. It is evident that the tenant's tax is, to all intents and purposes, a tax on the proprietors, to whom the tenants would willingly give a higher rent, if they were not liable to this tax, which is unquestionably a *surcharge* upon the landed interest beyond what is exacted from the monied interest. Suppose the tax on the tenants to be 6d. on the pound; it makes two and a half per cent. which would otherwise go into the landlord's pocket, making, with the direct tax of ten per cent. upon himself, twelve and a half per cent. whilst the monied man pays only the ten per cent. — *Sir John M. Murray, Bart.*

It is granted, that the tax upon farming-horses, no less than the wages of farm-servants, the tax on the tenant's rent, road and bridge-money, and all other public burdens, payable by farmers, do ultimately affect landed property; which circumstances give an advantage to the holders of stock, but not to annuitants.—*The Author.*

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It is unnecessary to give lessons to sheep-masters who are in the long practice of having store-farms; but to new adventurers in this trade it may be useful to know, that if they wish their flocks to thrive, to increase in quality and in size, to keep free of disease, to survive the severity of spring, to be vigorous at the lambing season, to have plenty of milk to suckle their lambs, to fatten early in the autumn, so as to have the first of the market; in short, that their flock may have a good character, so as to be eagerly sought after, and to deserve it; there is no rule to accomplish all these ends more effectual, than to stock the pasture *lightly*. A half-starved animal is at all times the wort of its kind, and will in every instance propagate an animal more puny than itself. It is in vain that you introduce a more valuable breed; it is in vain that you pay dear for high-priced males to improve the breed you have, unless you provide nourishment suited to the object you have in view. In all cases, it is more profitable to have eight hundred well-fed sheep upon a farm, than a thousand, which have not sufficient pasture.

In many of the inland districts of the county, all kinds of stock are pastured promiscuously; horses and cows, and sheep, and the old and young of all these, in one herd. This is still more the case in the islands, where the introduction of regular flocks is but very lately begun. Land can never be so productive to the proprietor or tenant under this management, as when the arable and grazing systems are kept separate, in the manner which may be most suitable to the local circumstances of particular farms. This species of farming puts one in mind of that stage of society in which every man was his own tailor, his own shoemaker, his

own carpenter, his own mason, his own every thing. How different the perfection of artificers, when every artist follows a distinct profession!

Some gentlemen in the lower parts of the county, have Bakewell tups among their Cheviot ewes, to improve the breed, which they keep in their enclosures. The issue from this crossing is likely to prove a most profitable and handsome animal. One gentleman in Laverness showed me a few Spanish sheep, and a ram of the same kind. Could the Bakewell figure, the Spanish wool, and the hardiness of the old Scotch breed, be incorporated in one species, it hardly is to be expected that any higher improvement could take place in this country. A gentleman of property, who is possessed of separate enclosures, of a suitable size and exposure, might in a few years make the experiment.

Two causes have contributed to the decrease of goats, and it is probable that their numbers will be daily diminishing. A sheep is a more profitable animal than a goat; and wherever the pasture is adapted to either of these animals, if the possessor of the farm is desirous to reap the full benefit of his ground, he will extirpate the goats, and depasture his lands with sheep. Woods of all kinds have become so valuable, that landlords who pay attention to this species of property, and derive an annual revenue from the sale of wood, have in most cases absolutely prohibited their tenants from keeping goats; because, when grass becomes scarce, particularly when the earth is covered with snow, they peel the bark, and eat the succulent buds from all timber, except the resinous kinds; and even of these, the young larch suffers. In the islands, where there is little or no wood, they are reared in greater numbers than in any other parts of the county; their skins are manufactured into

into purses for Highland regiments; which has raised their value a little, besides the nutritious quality of their milk. After all, they cannot compete with the sheep in value, as they have no fleece, and their flesh brings less money: their number in the whole county is supposed to be from four to five thousand.

SECT. III.—HORSES.

THE horses in this county are chiefly of two kinds—the old breed, that has been reared by the inhabitants time immemorial, which is small, hardy, clean limbed, nimble, and capable of enduring incredible fatigue. The gentlemen and more substantial farmers import horses from the southern counties, which are stronger, and of a larger size. The price of the former is from seven to twelve pounds sterling; of the latter, from twenty to twenty-five.

Before the sheep system prevailed so much as it now does, in the Highlands, every farmer, great and small, reared horses of the inferior kind. Their numbers were immense; they got very little provender, and were kept in the fields at all seasons, except such as were destined for labour. The breeding mares, and the colts and foals, were turned to the moors in spring, allowed to roam at large, and seldom looked after, except at the time of carrying home the peats; by which means they became very wild and ungovernable. They were sent down in droves to all countries in Britain, annually, for sale, besides what supplied the various purposes of the people by whom they were reared. But by the introduction of large flocks of sheep, the tables were turned entirely against the hill-horses; and no

more are now bred, than what the farmers deem necessary for their own labour. This circumstance has compelled the farmers in the Low Country to keep breeding-mares of their own, the usual supply from the Highlands having failed; and it were fortunate, if every disappointment had an effect equally good. While they depended on the Highland horses, they were obliged to take such as were offered, however inferior to their wishes; but now, since they must breed for themselves, they study to have them of a better size, and more suitable to their inclinations.

The horses now bred in the lower parts of the country, are generally of equal value with those imported, whose price has been already taken notice of. The trade, however, of importing horses, will probably be soon relinquished, because some of the proprietors, and more substantial farmers, keep excellent stallions; by which means the country will have a sufficient supply of a native breed, both for the draught and saddle.

In the Highlands and islands, horses alone are used for every kind of labour; but the ordinary tenants still keep too many, unless that surplus be required for carrying home their fuel. In the deep flat land along the Coast, oxen are in some cases yoked in the plough, but seldom or never trained to the cart or waggon.

There is something captivating in the appearance of a well-fed and well-dressed horse, when compared to the sluggish ox; yet notwithstanding this difference, when the farmers come properly to understand, that they can carry on their ploughing with oxen, at one-half of the expense occasioned by horses, for any length of time, and to any extent of work, they may become more favourably disposed to the ox. It must, however,

however, be acknowledged, that when a horse falls lean, or becomes fatigued, he is much sooner and more easily recruited than an ox.

SECT. IV.—HOGS.

Hogs abound most in countries where plenty of grain is raised; and from the description already given of this county, few districts can be supposed to have that requisite for the maintenance of swine. It was the custom of old, that every miller should pay part of his rent in this kind of bestial; but although this practice is not so general as formerly, yet a few are to be seen at present, about the corn-mills, where the refuse of grain cannot be consumed in any other way with equal profit.

The Highlanders, so far down as the last generation, had an aversion to this kind of food, which seems to be wearing off. Some hogs are reared in several parts of Inverness-shire, but most generally by the more intelligent people, who are least under the influence of prejudice, and even by them, only in the grain countries. These have begun to ameliorate the breed of this animal, by introducing what is called the Chinese hogs.

SECT. V.—RABBITS, HARES.

THERE is no warren in all the county; a few are said to be kept in enclosures near Inverness, merely as a matter of convenience. In the Isle of Harris, there are
wild

wild rabbits; but they never have been brought to any account, as an article of sale.

Common hares are to be found in all parts of the county; but in this and all other countries, they are more numerous in low situations than in those which are mountainous. The Alpin hare inhabits the highest mountains both summer and winter. During the season that snow is usually upon the ground, it assumes a pure white colour, and on the approach of spring, the white is tinged with grey hairs, which always increase in number, until the fur of the animal all over becomes a beautiful silver grey, which lasts until the next November. So wisely has the Author of Nature furnished all animals with the means of their safety and preservation, in aid of the instinct they are endowed with for these purposes. Even man, no less than other creatures, has the vigilance of Providence, in furnishing the means of his safety, to acknowledge: with all his boasted powers of body and mind, and skill in architecture, he would find himself woefully at a loss in cold climates, were there no such things provided for him, as wool and flax; and in hot climates, where no wool will grow, his condition would be little better, scanty as may be the covering he requires, were it not that his bushes produce the downy cotton! If we look attentively around us, to all orders of creatures in the air, in the waters, and on the face of the earth, we must see that the protecting care of the Creator extends to them, in many respects, besides mere existence. But I must return to my subject; my duty at present is not to philosophize, but to narrate facts.

SECT. VI.—DEER AND ROES.

ALTHOUGH there be no regular forest in all the county, except that of Lochiel alone, yet there are straggling deer to be met with, in almost every part of the mountainous districts. The great forest of Gaic, which is the property of the Duke of Gordon, having been lately dismantled and rendered a sheep-walk, the deer it contained have either taken shelter in the adjacent forest of the Duke of Athol, or are roaming at large in the surrounding mountains, without a friendly home.

Roes are frequent in all the woody and warm glens, where there is plenty of shelter and pasture. The character and peculiar habits of these creatures, are taken notice of with some degree of accuracy, in the Report of Perthshire, and cannot with any propriety be resumed in this place, without being prolix.

SECT. VII.—POULTRY.

COMMON poultry are met with about every door; the higher ranks of the inhabitants have geese and ducks; and a few have turkies and Guinea fowls: peacocks are more rare. Some families had more, others had fewer, of these different kinds, of which it is unnecessary to give any particular detail. It was the custom, in the last generation, to pay to the landlords a common fowl, along with every boll of grain charged in the rent, when it was rendered in kind; a dozen or two of hens and capons from every mill, and one fowl for every smoke, and a certain number of chickens for every garden.

But

But all these casualties being changed into a money-rent, the breeding of fowls is not so much attended to as formerly; though still their number is considerable, especially in the vicinity of Inverness and the villages, where they find a ready market, and fetch good prices.

There is not a pigeon-house in the whole county. A few tame pigeons only are to be seen about some gentlemen's houses; so that it is superfluous to make a separate Section for this subject.

SECT. VIII.—BEES.

BEES are said to have thriven better in the county of Inverness before 1782, than they have done ever since that year. Although it cannot be deemed incumbent on me, to account for every extraordinary circumstance; yet it seems probable, that this decrease in the number of bees, may be owing to the change which has taken place in the seasons, since that period. Warmth and fair weather are so necessary for the various operations of these industrious insects, that two or three inclement seasons in succession, almost extirpate them from any country; and it is well known, that for some years back, our summers have been colder, the influence of the sun less powerful, and our vegetable productions more tardy and scanty, and our weather more unsettled, than usual. The bee lives entirely upon vegetable food, and requires favourable opportunities to collect it; and unlike many of our other useful creatures, it cannot thrive without the exercise of human industry. A few backward seasons therefore, in any country, discourage most people from persevering in the propagation of bees.

I find,

I find, nevertheless, by my notes, that though the hive-bee is rare in the higher regions of the county, yet in the valley of Urquhart, hives are seen almost in every garden, from head to foot, except on the banks of Loch Meikley, where they do not thrive. The reason given for this exception is, that they are supposed to be drowned in the lake, while crossing over with a load of honey. In all other countries, no less than in this place, broad sheets of water are unfavourable to the propagation of bees. In the Aird, and along the East Coast, they are frequent; in Strathnairn they thrive in some places, which is the case in Strathspey, and the lower parts of Badenoch.

The most surprising circumstance of all is, that some years ago, when bees did thrive in this county, the honey is said to have been sold for 2s. 6d. the Scotch pint (or half gallon), and at 6d. the pound weight in combs; which is a proof, either of the high value of money in that part of the kingdom, or of the great quantity of honey in the market, or perhaps of both. Besides what was consumed at home, a considerable quantity was then exported.

Some gentlemen have got glass-hives; but the common straw hive is found to be more favourable, by reason of its warmth, and superior comfort, in allaying the rigor of severe winters. Every one knows, that bees can do no good, unless they be kept snug and dry, and protected from mice and other vermin.

CHAP. XIV.

RURAL ECONOMY.

IN giving an account of the rural economy of any Highland country in this part of the world, or perhaps of any other country, the writer ought to pay attention not only to the habits and industry of the people, at the precise period when he is writing; but to look back to what these were formerly, and look forward to what they are likely to become in the progress of society.

While the riches of a nation consist chiefly in their flocks and herds, they, with great propriety, bestow their principal attention in feeding and protecting them. When the agricultural system begins to be engrafted on the pastoral, their cares are occupied between the cultivation of grain and the tendance of cattle; and when the benefit of commerce begins to be understood, a portion of the inhabitants desert the cattle and the plough, and engage in trade. Were it necessary, instances of these progressive stages of society might be quoted in abundance from the history of all nations, nay, even from the history of the same nation at different periods. How ridiculous then the practice of the writers of travels, and of others, who, in committing their tours to paper, stigmatize the practices of a people in any one of these stages of society, by comparing them to those in another. The object of their industry is widely different; therefore the test by which that industry ought to be judged of, is equally different.

ferent. We see persons emerging from a city, or from a country, where every acre of ground is subjected to the plough, express their astonishment, in the strong language of abuse or contempt, at the homely habitations, and apparent sloth of those, who follow their cattle from valley to valley, among the hills. The shepherds and herdsmen have an equal right to recriminate, with the charge of vanity and effeminacy: but to do so, would be the effect of ignorance and narrow-mindedness, equally preposterous in both, which must have proceeded from pre-conceived habits, peculiar to the situation of life, in which either of them had been placed. Of this puerile prejudice every sensible man wishes to divest himself, in passing sentence on the conduct of another, whose situation is different from his own.

Any man is well employed in pursuing a laudable occupation, with industry and perseverance, whatever that employment may be. The shepherd who follows his flock from one part of the pasture to another, and erects his hut, or repairs the old one, in every station as he goes forward, is as usefully, though not perhaps so lucratively employed, as the merchant who sits at his desk. Both minister to the convenience of the public, however different their pursuits may appear, or generally their rank in life.

This practice of attending their cattle of all kinds to distant grazings among the hills, prevailed at one time universally, among the inhabitants of the Highlands of Scotland. It prevailed in a certain stage of society in all countries; but was sooner departed from, where the land was favourable to the operation of the plough, and still sooner on the sea-coast, or on the banks of a navigable river.

SECT. I.—LABOUR.

It is not altogether the want of knowledge, but also the scarcity of labourers, which retards the progress of agriculture, in the county under review. Numbers of young men, allured by the certainty of higher wages in the southern counties, leave their own country, and repair thither every spring, where they continue during the working season. This annual emigration is loudly complained of, as having the effect, to render those who remain, more exorbitant from year to year, in their demands of wages.

In most cases, unmarried servants are engaged for six months only; it being the practice of the county to make the contract between master and servant of no longer duration. These are always maintained in the farmer's house, and their wages are from ten to twelve pounds, in general, for a whole year. The women are hired at from three to four pounds, during the same length of time. Married men-servants, who are commonly hired by the year, charge the same money-wages as the unmarried, together with six bolls of livery-mcal, and ground for half a boll, or sometimes more, potatoes. Their house and garden is rent-free, and in some instances they have a cow's grass during the season, and provender in winter. Shepherds are generally allowed six bolls and a half of meal, besides keeping for two cows and sixty or seventy sheep. The hire of a common labourer by the day, is one shilling besides his maintenance, or a sixpence more without food, from his employer. This is the general average of the wages of servants and labourers; yet in some parts of the county they are somewhat higher, in others lower.

The

The advantages and disadvantages attending each kind of men-servants, will easily occur to a thinking person. The unmarried lads are always at hand to be called upon in any emergency; nor are they so precise about their hours of labour: the married men are more steady, and less addicted to roving about, when once they and their families are comfortably set down.

Besides these stated servants, many of both sexes are hired during the reaping season: the men, from one pound five to one pound fifteen; and the women, from one pound to one pound four shillings.

The complaints about the increase of wages of all kinds, are mostly ideal. The landlord draws more rent than he did formerly for his lands; and the farmer receives a higher price for all the produce of his farm; so that the price of labour ought also to rise. The note inserted below, being communicated by a gentleman who has paid much attention to this subject, appears of such importance, that it ought to be laid before the reader*.

Whenever the demand for labourers is greater than the number of those who offer their labour for hire,

* The rise in the price of labour proceeds from three causes: 1st, The increase of the precious metals, or what is the same thing as to this matter, of paper currency, *greater* in proportion than that of other commodities; 2d, The greater demand for labour, from the progress of *accumulation*, and of *industry*; and 3d, The *habits and modes of living* consequent on this progress. The first is a *nominal* rise only; as the workman gets no more for his *shilling* than he formerly did for a *sixpence*; the two other causes *really enhance* the wages of labour, although the operation of the last is more subject to limitations than the direct effect of the former. Competition for labourers is the great cause of the real increase of their wages; while the circumstance, that these workmen can no longer live without superfluities, has only an indirect and secondary effect, from the alternative of disposing them to celibacy or emigration.

their wages must necessarily increase; and whenever the workmen solicit employment, the price of labour becomes more moderate. This commerce is invariably regulated by these circumstances. If the purchasers of labour are more numerous than the sellers, like every other commodity, it becomes higher in price; and when the sellers are most numerous, it becomes cheaper.

All artificers of various denominations have raised their wages of late, in the same proportion with farm-servants and common labourers.

SECT. II.—PROVISIONS.

IN the autumn of 1804, the oatmeal in Lochaber, and that imported at Maryburgh, and other places on the West Coast, sold from twenty to twenty-one shillings the boll, of eight stones Amsterdam weight.

The following Table of Fiars; shews the established prices of the various kinds of grain and meal, upon the respective years referred to.

Abstract of the Fiars of the County of Inverness, since Crop 1790, till Crop 1803, both inclusive.

For Crop 1790, ascertained by Jury on the 2d March, 1791.

Barley,	£.0 17 0
Victual, oats and oatmeal,	0 15 0
Pease,	0 15 0
Wheat,	1 1 0

For

For Crop 1791, ascertained by Jury on the 15th March,
1792.

Barley,	£.0 18 0
Victual, oats and oatmeal,	0 16 6
Pease,	0 16 6
Wheat,	0 19 0

For Crop 1792, ascertained by Jury on the 15th Fe-
bruary, 1793.

Barley,	£.0 18 0
Victual, oats and oatmeal,	0 15 0
Pease,	0 15 0
Wheat,	1 0 0

For Crop 1793, ascertained by Jury on the 25th Fe-
bruary, 1794.

Barley,	£.0 19 0
Victual, oats,	0 15 0
Oatmeal,	0 16 0
Pease,	0 16 0
Wheat,	1 1 0

For Crop 1794, ascertained by Jury on the 25th March,
1795.

Barley,	£.1 0 0
Victual, oats,	0 16 0
Pease,	0 16 0,
Wheat,	1 0 0
Oatmeal,	0 16 0

For Crop 1795, ascertained by Jury on the 18th March,
1796.

Barley,	£.1	0	0
Victual, oats,	0	18	0
Pease,	1	0	0
Wheat,	1	7	6
Oatmeal,	0	18	0

For Crop 1796, ascertained by Jury on the 17th Fe-
bruary, 1797.

Barley,	£.1	3	0
Victual, oats,	0	17	0
Pease,	0	17	0
Wheat,	1	3	0
Oatmeal,	0	17	0

For Crop 1797, ascertained by Jury on the 21st Fe-
bruary, 1798.

Barley,	£.1	2	0
Victual, oats,	0	17	0
Pease,	0	17	0
Wheat,	1	1	0
Oatmeal,	0	17	0

For Crop 1798, ascertained by Jury on the 22d Fe-
bruary, 1799.

Barley,	£.1	0	0
Victual, oats,	0	16	0
Pease,	0	16	0
Wheat,	1	1	0
Oatmeal,	0	17	0

For

For Crop 1799, ascertained by Jury on the 21st February, 1800.

Barley,	£. 1	6	0
Victual, oats,	1	1	0
Pease,	1	5	0
Wheat,	2	4	0
Oatmeal,	1	5	0

For Crop 1800, ascertained by Jury on the 6th March, 1801.

Barley,	£. 2	2	0
Victual, oats,	2	0	0
Pease,	2	0	0
Wheat,	2	10	0
Oatmeal,	2	0	0

For Crop 1801, ascertained by Jury on the 26th February, 1802.

Barley,	£. 1	10	0
Victual, oats,	0	18	0
Pease,	1	0	0
Wheat,	1	13	9
Oatmeal,	1	0	0

For Crop 1802, ascertained by Jury on the 4th March, 1803.

Barley,	£. 1	5	0
Victual, oats,	0	17	0
Pease,	1	8	0
Wheat,	1	7	0
Oatmeal,	1	0	0

For Crop 1803, ascertained by Jury on the 2d March,
1804.

Barley,	£.1	6	0
Victual, oats,	0	6	0
Pease,	1	8	0
Wheat,	1	7	6
Oatmeal,	1	5	0

Inverness, 21st August, 1804.

The foregoing is a true abstract of the Fiars of Inverness-shire during the periods above-mentioned, taken from the records kept by the Sheriff-clerk of the said shire.

(Signed) SIMON BISSET,
Assist. Dep. Clerk.

From Fort Augustus, northward, the prices and weight of meal are regulated by the market of Inverness; which was sold at the county-town; during the season formerly mentioned, from twenty-three to twenty-four shillings the boll, of nine stones of the same weight. In the interior parts of the county; such as Glenmoriston or Badenoch, they pay three or four shillings more on every boll, as a compensation for inland carriage.

English barley brought twenty-seven shillings the boll at the port of Inverness, while inferior kinds, being of home growth, sold from sixteen to eighteen shillings. Nothing marks the difference betwixt the comparative quality of that grain produced in the South, and the same kind in the northern parts of Great Britain, more accurately than facts of this nature. Distillers

lers can discover the intrinsic value of the barley of different countries with more precision, by the quantity of spirits they produce, than any speculative chemist, who has no fortune embarked in the trade.

Beef sold at eightpence the pound, of Dutch or Amsterdam weight: the pound of this weight is seventeen ounces and a half of avoirdupois or English; the stone being, in both, sixteen pounds. Mutton was one penny or three halfpence cheaper.

During the season to which the Manuscript Notes sent to me by the Board refer, all these articles of provision were cheaper; and there is no doubt that the increase of population, occasioned by the number of labourers collected to carry on the Caledonian Canal, which, by the Report of the Managers, were no fewer than nine hundred in summer 1805, has raised the price of provisions of all kinds higher; and when their numbers increase more, the prices will rise in proportion.

Near the Coast, both in the western and eastern districts of the county, the inhabitants make much use of the various kinds of fish, with which the sea abounds, besides those peculiar to fresh water, taken from their numerous lakes and rivers.

The season of the herring-fishery is the time of plenty, in all the contiguous countries. The inhabitants of the interior, no less than those on the sea-shore, avail themselves of this bounty of Providence: from the distance of many miles to the bay, where the herrings make their appearance, the people, with horses, repair in companies like caravans. The steep ascents they have to climb; the rivers they have to ford, the rocky paths they have to pass; and the precipices they have to descend; with their little horses carrying a basket on each side, filled with herrings; shews what these people

would do, were they to enjoy the convenience of cart-roads and bridges.

The gentlemen of this county supply their families with the common articles of provision, both of flesh and fowl, from their own enclosures, in the same manner as those of their rank, in every part of the kingdom.

The markets at Inverness, Fort George, and Fort William, are well supplied with beef, mutton, veal, and poultry of all kinds, from the adjacent country. The three fishing villages on the East Coast, belonging to the Earl of Moray, to Lord Cawdor, and to Mr. Duff of Muirtown, afford a plentiful supply of that article in their own neighbourhood; and fishing is so convenient and so successful, along the shores of all the islands and West Coast, that every man is or may be a fisherman. A gentleman, who had newly returned from one of these islands, told me, that he sat down to eleven dishes of different kinds of fish at one table, besides venison, and other delicacies peculiar to that country. The variety of fish, and the delicious flavour of the dishes, to be seen on the tables of the wealthy in these situations, are proofs of the incalculable fund of provisions that might be procured from this quarter; provisions not only nutritious and palatable, but luxurious in a high degree, and so copious and attainable, as to *equal*, by common report, the butcher-meat on the surface of the whole county.

The ordinary food of the common people, in this shire, consists mostly, during the summer months, of the produce of the dairy, and what little meal they can command; and in the other part of the year they live upon potatoes, which are generally dressed with fish, or butcher-meat, or what milk they can procure at that season. This valuable root forms the basis of
their

their food; yet hardly any are so poor, as not to have something along with the potatoe, to give it a relish.

Of the out-servants and shepherds of the great tacksmen, who live upon an allowance of livery-meal in houses of their own, the condition is very comfortable, considering their rank in society. Their allowance has been mentioned already. If the situation of their dwelling does not admit of keeping a cow, from the want of provender for winter, they agree for a few more sheep, according to circumstances, and less money. The industry and economy of a careful wife, enables a man of this kind to rear a healthy family of children, who, by reason of their early habits of application and experience, become the most expert and diligent of all servants, in their own profession.

Notwithstanding the present rage for emigration, the lower ranks of Highlanders, in general, live at this day with more comfort, and in greater plentifulness, than any former generation. Before the culture of potatoes became so extensive, I have known, that their fathers and grandfathers were urged, by necessity, to bleed the cattle occasionally, when their pittance of meal was expended; and having afterwards boiled this blood, until it became solid, they ate it for bread with the milk of their cows. No such necessity prevails at present.

The county of Inverness produces butter and cheese, more than sufficient for the consumption of the inhabitants; though a small quantity of the latter is imported, which being of a superior quality, meets with purchasers among the wealthy. The cattle and sheep sent annually to market from this county, are the great source of wealth to the people, and far exceed the money sent out of the country to purchase meal.

Whatever affects the provisions of any country,
must

must ultimately affect the population : and as corn has, from the earliest ages, been the chief mean of the subsistence of the people of Britain, it is devoutly to be hoped that the Legislature will never be so far wanting, in their desire to promote the prosperity of the realm, as to enact regulations, or to suffer regulations to be adopted under their eye, which may operate against the growth of grain. The more grain you grow, the more people you are enabled to feed. Let us beware therefore of discouraging the industry of the husbandman, by injudicious restrictions, which may become so many prohibitions, on the article he means to bring to market.

Every man who is employed in preparing any commodity for sale, may be considered in the light of a manufacturer, or merchant, or both. The farmer is the most useful of these denominations, because we cannot subsist without the use of that commodity which he provides and offers to sell. If this principle be just, one might be almost tempted to conclude, that the corn trade ought to be as free, as that of any other commodity which is the product of human skill and industry. But cases might occur, in which this freedom would be productive of the greatest national calamity. In years when our crops could do no more than feed ourselves, a famine at home might be produced, by suffering the grain to be sold to countries, which, by being in greater want, would offer a higher price, than the native inhabitants. On the other hand, if the growth of grain is encouraged, and the seasons prove so favourable, that more corn is reaped than the inhabitants can consume, the commodity becomes a drug, the market is glutted, and the farmer is perhaps ruined, unless he be permitted to export, and find a
market

market where it can be found. He may bear with the discouragement and loss for a season or two, without changing his system; but a man of reflection abandons the arable system, when ruin stares him in the face, by the operation of severe restrictions imposed upon that system. He has recourse to grazing, even on the best of his fields, in which mode of occupying his land, he is allowed to sell the produce where he pleases, and to prosecute his interest, without being fettered by prohibitory regulations. Suppose that many among his brethren shall follow his example, and that the practice become general, what becomes of the bread which ought to feed us? In these circumstances, the farmers are *at first* nearly undone; and *afterwards* the nation may suffer all the horrors of famine*.

Great tenderness ought therefore to be used, in every circumstance, which affects the agriculture of the country, because that affects the principal means of subsistence to the people. Every regulation relative to the corn laws, ought to be framed with a comprehensive understanding, a feeling heart, and a delicate hand. Various interests are to be adjusted. The different classes of manufacturers, and the other inhabitants of towns and villages, are clamorous* against exportation, without

* It may be remarked, that the vast sums bestowed in premiums for the importation of grain, might be rendered unnecessary in future, by the application of premiums for reclaiming waste lands, of which there are millions of acres in the united kingdom. The produce would not only provide for increased population, and make us independent for our food on foreign nations; but soon repay the advances, by the taxes drawn from this additional population, which is the surest source of the best wealth.

In a national point of view, the propriety appears evident, of devising means for encouraging great proprietors to maintain at present, even a greater population than ever.—*Sir John M. Murray, of Lanrick.*

† Manufacturing towns are, too often, nests of sedition. Many artificers work one half of the week only, and are idle, drunken, and riot-
ous

without adverting to this plain consequence, already taken notice of, that unless the arable system be encouraged, the farmers will throw their lands into grass; by which means the manufacturers lose more than they gain, were they to procure an unqualified prohibition against exporting grain.

The growers of grain, on the other hand, contend that grain has, from any period that can be mentioned, risen less in price, than any other article of consumption; and, considering the increase of the price of labour, and of the rent of land, that they ought to be treated with the same tenderness as all others, who offer the product of their industry to sale; and therefore that in this free country, they ought to be allowed to possess the full liberty, of bringing to the best account, the article in which their capital and fortune is vested. This would be going too far; the premises do not support such a conclusion, in an unlimited sense. What ought to be the intention of all the regulations enacted by the authority of parliament, but that they may operate as salutary restrictions on the community, for their benefit. No country can be so free, but absolute power must be lodged somewhere; and even in this free country, some great stretches of power are occasionally made, which the constitution tolerates—the pressing of sailors, the suspension of the Habeas Corpus, no less than the restriction on the exportation of grain.

ous the other. If they were required to sell their wools to the farmers on lower terms than they might get by sending them to distant markets, their clamours would be loud, and insufferable; yet they have the audacity to become turbulent, if the more useful, and much more valuable class of society, the cultivators of the ground, take the benefit of the market prices, for their commodities: they would sell wools and shoes dear, but must have meal cheap.—*Sir John M. Murray, of Lanrick.*

These

These restrictions upon exportation may however be carried so far, as to prove, not only injurious to the agriculture of the country, and the support of the people; but the drain of specie occasioned thereby, in various ways, may be so great, that the national credit may ultimately be in danger; and therefore it has often been the wise policy of the British Legislature, in the reigns of Henry VII. and VIII. and in that of Charles II. and at other times, to encourage the growth of corn, both *by severe restrictions on arable land being employed in grazing; by prohibitions upon enormous sheep stocks, and by giving a bounty for exportation.* These regulations were dictated by the soundest judgment, and the most earnest desire for the national prosperity; and they had the most happy effects. Corn was produced in abundance at home to feed the inhabitants, without having recourse to the ruinous but necessary expedient of sending money abroad, which never would return, for purchasing grain to prevent a famine, as we are often obliged now to do.

The cry which is occasionally raised about the increase of the price of grain, is at once unreasonable and absurd. No man who joins in that cry, takes the trouble for a moment to reflect, that the price of grain has risen less in any specific number of years, taken on an average, and at any period of our history, than the price of any other article whatever, which is required for the support of human life. Take twenty or forty years, or one or two centuries, and compare the relative prices of the different species of food, at the beginning and end of each period, and you will find that the prices of butcher-meat, poultry, and fish of all kinds, advanced more within that time, than corn has done. By an induction of particular instances, it

were

were easy to establish this proposition, beyond the possibility of being controverted. In no case whatever, am I afraid of it being found untrue. Why then the hue and cry against the growers of grain? They ought not surely to be blamed as the cause of the depreciation of money, more than any other class of the community, who offer the fruits of their labour to sale. The farmers feel the effects of this decrease in its value, equally with all other ranks. When grain was sold at only the half or two-thirds of the money it will fetch at present, the price of a chalders would go farther to the husbandman, in defraying the expense of labouring his ground, in paying his rent, and in providing clothing for his family, than it will do at this day. Upon the whole, it appears to be a fair conclusion, that these men, who employ their capital, and their time, and their study in the raising of corn, should be treated with the same lenity, and the same attention to their interest (to say no more), as the breeders of cattle, or the makers of webs, or the sellers of shoes.

It has been shewn, that it is shallow reasoning indeed to maintain, that the establishment of severe restrictions against exporting, in all cases, is the sure way to have low-priced grain; and it is equally weak to suppose, that a reasonable indulgence to the cultivators of the ground, in allowing them to expect a fair profit on the crops they raise, is the way to heighten the price; on the contrary, this expectation would stimulate them to raise great and good crops, with a view to promote their own gain. The consequence of their doing so, would infallibly be plenty at all times at home, and hard cash from other countries, for what surplus remained after feeding our own people.

Having laid these general principles before the
public,

public, I drop this subject, without entering upon any detail of the provisions that might appear necessary in framing corn-laws, which ought to be fair and equitable, embracing the separate interests of all parties concerned: neither do I say what price ought to be fixed for grain, because this price ought to vibrate in a balance with the price of labour; nor does it seem to be possible for any legislative regulation, for various reasons, to establish a specific price of either. But this I firmly believe and contend for (which may be laid down as a fundamental maxim to be admitted on all hands), that if the British farmers are encouraged by wise and equitable regulations in the corn-laws, to exert themselves in the cultivation of grain, the calamities of 1800 and 1801 will seldom return; we shall always have plenty of bread at home, and that too at a fair price, besides some to spare occasionally to our neighbours.

SECT. III.—FUEL.

IN the shire of Inverness, the fuel used in some districts is very different from that in others. At Fort George, and in the county-town, and in the vicinity of these places, the inhabitants depend mostly upon coal; which is carried by sea, from the south east of Scotland, or from Sunderland. The garrison and village of Fort William, and the gentlemen situated near that arm of the sea called Lochiel, use for the most part the coal from Glasgow, imported by Clyde vessels. In the vicinity of Castle Grant, and in the lower parts of Strathspey, the higher ranks of the inhabitants carry coals from the port of Findhorn. But the lower ranks,
not

not only in these places, but in all the inland parts of the country, make more use of peats than of any other fuel. The tracts of moss are so extensive, and so adjacent to most of the farms, that except in the Aird, there is no difficulty in finding access to fuel of this kind, which is indeed less powerful, and less durable than coal, but at the same time is much more easily kindled, and makes a ready fire.

In Stratherrick, in the higher parts of Strathspey, in Badenoch, and in every other place, which had in ancient times been covered with forests of the Scotch pine, the inhabitants are very industrious in digging the old roots of fir trees, which they split and dry. The great quantity of rosin makes a most powerful fire, but the quantity of smoke emitted from these roots is offensive to strangers.

The extensive plantations which have been made within half a century, in various parts of the county, particularly along the South sides of the Murray and Beauly Firths, afford great relief to the poor in these places, by lopping off the decayed branches, and by other gleanings.

A practice still prevails in a few places of Inverness-shire, which at one period was prevalent in all the Highlands, of casting turf for fuel: no apology can be made, which will excuse this custom, where any other fuel can possibly be procured. A great part of the surface is peeled off season after season, and carried away; and such wounds made in the grass, as will require years from the healing hand of Nature to close. The face of the earth, after an operation of this kind, is full of scars and blotches, like the human face newly recovered from the ravages of the small-pox.

Another mistake prevails, which the proprietors ought to

to correct. Most of the mosses are cut very irregularly, by digging deep and large pits in different places, according to the caprice of those who cast peats. These pits fill soon with water, and form so many ponds for drowning cattle. This slovenly practice not only endangers the lives of cattle reaching over the banks to pick grass, and also of men, when the ground is covered with snow; but is a great waste of the only fuel, which in many places can be obtained. Both in this and in every other Highland county, the scarcity of moss is beginning to be severely felt in some places, in-somuch, that I see by my notes, although immense fields are to be met with in particular districts; yet in others, the inhabitants are unable to carry home any more than a single draught of peats in one summer's day. Many of these inconveniences may be partly removed, and all of them alleviated, very easily. Let the owner of the moss appoint a judicious person, from among the tenants in a neighbourhood, to be overseer of the common moss, who shall allot to every man his place, which he must cut regularly, so as to let the water run freely away, and prevent it from stagnating. The cutting of a field of moss ought always to be begun on the side next the declivity.

On this subject one other direction occurs, which in a rainy climate may be very useful, while it creates no additional labour, but in one year of a householder's life. Study every summer to have peats beside you, sufficient for the consumption of two years. Peats a year old are much freer of smoke, than the year they are cut, provided they are put up carefully, and kept dry; and when an unfavourable season occurs, in which the peats are lost, and those who neglect this precaution greatly distressed, by having no access to

any other fuel; the industrious man, who has provided against such an occurrence, enjoys plenty of that essential comfort of life for himself and family. In many parts of Aberdeenshire, and elsewhere, the inhabitants burn this year, the peats that were cut last year.

CHAP. XV.

POLITICAL ECONOMY,
AS CONNECTED WITH, OR AFFECTING AGRICULTURE.

WHETHER mankind be considered as collective bodies, united together in larger or smaller societies, they are subservient to the convenience, and promote the happiness of each other. Without a social intercourse between coterminous nations, and between adjacent counties, districts, or villages, there must be a want of all the good offices, which each can perform, and of all the advantages and comforts each can bestow upon its neighbours. It is the interest, as well as the destiny of man, in all civilized societies, to be desirous of intercourse with those who live near him. Hence the desire for roads, and other means of communication.

In rude ages, the roads, which connected different countries, were, like the inhabitants, rude, and forbidding. But in proportion as the wants of men became more numerous, and means of supplying them discovered, better access to that supply was sought with more eagerness and more frequency; and when the increase of wealth, or the industry of men, coincided with their inclination, they thought, in good earnest, of facilitating the intercourse with their neighbours.

SECT. I.—ROADS.

IN a hilly country, the making of roads is an arduous labour. When the wants of the inhabitants are few, and the wants they can supply, or the conveniences they can bestow upon their neighbours not many, this labour remains for a long time unattempted. The great commodity, of which the Highlands of Scotland have for ages disposed to the low and southern districts, was beef; but this beef could be conveyed alive, upon such roads as they had.—At a very early period, the Legislature of Scotland enacted very judicious laws, regulating the labour necessary to be bestowed upon the public roads within the realm. The enforcement, however, of these statutes, depended upon the gentlemen of the different counties, who were more intent upon the profession of arms than the improvement of their country; and the work appeared so arduous, that a little labour, in such a country, was only as a drop in the ocean: the law in most cases was allowed to fall asleep, and nothing was done. The people were, as might be expected, equally averse with the gentlemen, to the making or repairing of their roads.

Several years after the Union, the British Parliament took up the business, and gave the first example of the practicability and the utility of good roads, by forming lines of communication, at the national expense, from each of the three military posts of Fort William, Fort Augustus, and more lately Fort George, to the garrison at Stirling; and also between each other. The road from Stirling to Fort William is joined, at Tyndrom, by another line from Dumbarton; and from Fort Au-
gustus

gustus a road was made to the barracks at Bernera in Glenelg, which has been much neglected, and is now almost impassable.

These roads opened access into the Highlands in various directions, to the very extremities of the shire of Inverness; and what was still of greater benefit, opened the eyes of all ranks in that country, to discern the utility, and pleasure, of roads executed with so much perfection. Of late years, uncommon attention has been paid to the bye-roads, because government still continues to uphold and improve the military lines of communication above-mentioned, wherever the country through which they pass is thinly inhabited.

By a late Act of Parliament, Government extends its bounty farther, in concurrence with a joint support from the county. Every property in the shire is annually assessed during fifteen years, at the rate of 1s. in the pound of rent, to which an equal sum is added from the Exchequer, to open the roads of greatest use within the county, next in respect of importance to these military lines: of which a particular detail is given in the Report to the House of Commons, relative to this business. That from Fort William to Keppach in Arasaig, was far advanced, when I traversed that country; and both the direction and execution were in a masterly style. Bridges are very much wanted, where many miles must be frequently travelled over, without seeing a human being, and where the traveller may find himself enclosed between tremendous torrents from the mountains, equally uncertain, whether it be safest to advance, or retire, or pass the night without shelter, under a deluge of rain. The other lines will require bridges no less than the line to Arasaig: but whenever

the direction of a road is fixed, the erection of bridges, where there is danger, ought to be a chief, and a first concern; because one can get along a bad road more safely than over a swollen river*.

The judgment already discovered, in the execution and direction of such roads as are begun, gives every reason to hope, that the same judgment will be displayed in the construction of the bridges: in doing which, I must admonish, that no precaution is more necessary, than giving the arches such a wide span, as never to be in danger, by the greatest torrents, of being choked with too much water, and carried away. One of the first bridges built upon the Arasaig line, owed its downfall to this cause. The sufficiency of the mason-work was proved, by one half of the arch remaining, when I passed that way, while the other half had been carried down, by the force of the stream upon a bridge too narrow to contain the quantity, or resist the weight of water.

The road entering the county by the Black Mount, has got a different direction from what it had at first, in various places, and particularly by turning to the left, at the place called the Stairs, down through the valley of Glenco. But neither of these lines is the proper one; the road should have been conducted, not by the left, but north of the Stairs, through an opening called Mamghrianan, round the head of Loch Leven, where both the ascents and the distance to Fort Wil-

* Wherever roads are made at the joint expense of Government and counties, Administration should bind the proprietors to build inns, of specified descriptions, at convenient distances, to be also expressed, for the accommodation of travellers, with small farms annexed.—*Sir John M. Murray, of Lanrick.*

ham are less, than by Glenco or the Staircase, besides avoiding a ferry. In Glenco, the principal road is often clogged by the stones, which are loosened by the rains, and tumbled down from the face of the rocks, that tower on either side aloft to the skies, and seem to close above the traveller's head. In one place I travelled over a field of these stones, whose depth was at least five feet, as appeared by a wall at its extremity, and whose breadth covered some acres of ground. If the frittered rocks were in the act of falling during a thunder shower, one might as well have been an inhabitant of the ancient Herculaneum at the foot of Vesuvius. In this, and in similar places, the larger fragments are carefully removed every year, otherwise the road would be impassable; but notwithstanding all this attention, the remaining stones have such sharp points and edges, as to endanger the hoofs of horses, unless they be uncommonly hardy.

In the tract from Highbridge to Fort Augustus, particularly by the side of Loch Lochy, about Letter-Findlay, the military road is in many places too shelving: the gutters once made upon the side next to the hill, if ever there were any, are now so far filled up, that the water, which oozes from the bank above, or descends from the mountain, passes over the road in a sheet, in place of passing below it, under a covered drain. This circumstance may not annoy passengers in summer; but in winter, when a road of this form is covered with ice, the chance is, that carriages, or horses not newly shod, may slide over the lower side, and travellers be in danger of perishing, by falling down a precipice.

Along one or other of the sides of Loch Ness, and contiguous to the lake, a road is spoken of, from Fort Augustus eastward. If attention is to be paid to the

facility and dispatch of dragging vessels on this lake, against contrary winds, after the Northern Canal is finished, it would appear, that the south side is the most eligible tract for a road, because it is said to be four miles shorter, and would save the expense of two bridges, besides being a straight line; while the northern shore is much indented.

To render the communication easy between Strathcrie and Inverness, for the purpose of bringing lime, and other heavy carriages to that strath, a new road ought to be opened, from the side of Loch Ness, by the bridge of Inverfarigan, which would be less steep, two-thirds shorter than any other line, and meet the country road in the middle of Strathcrie, where it would be most useful.

When the projected lines from Locharkaig to Morer, from Glengarry to Knoidart, and from Glenmoriston to Bernera, are finished, together with that from Corpach to Arasaig, which is in great forwardness: the communication of the interior with the Western Ocean being complete, will be highly beneficial to all the districts of the county adjacent to that coast. In place of small horses, with baskets slung on their sides, carts will repair to the coast, for loads of herrings, and other kinds of fish in their season.

The shoals of herrings are very uncertain, as to the time of their appearance upon the coast; and when they do arrive, the fishermen (for every man there is a fisherman) catch them in such quantities, that they are sometimes left, literally rotting on the shore, or generally in bad condition, before they can be removed to the interior of the country.

The causes which have uniformly and time immemorial, produced this waste of human food, are, first,
The

The want of roads; and, secondly, The want of salt. This subject has occurred formerly, in writing these pages; but it cannot occur too often. I prefer being charged with tautology, rather than omit any opportunity of pressing upon the attention of the public, and particularly the inhabitants of Inverness-shire, the importance of the herring and other fisheries on this coast, and the necessity of procuring every facility, in rendering such an immense fund of human food productive; to the inhabitants of this part of Scotland. When these roads shall be made, part indeed of the evil will be removed; but if the embarrassments, and delays, and checks, in executing the salt-laws, shall remain, which hitherto have taken place, in procuring salt equal to the demand, it is self-evident, that we willingly and wantonly put a negative on this great boon of Providence, which is adequate to the maintenance of so many thousands of the people.

I plead not for cheap salt, unless it can be procured at a moderate price. Let it be at hand, be the price what it will: if the revenue require heavy duties, and every degree of diligence in the collection of these duties; let the restrictions in the use of salt be so correctly accurate, that an ounce cannot be applied to any other purpose; but let it be *attainable* in the moment of necessity; and let the supply be equal to any demand that may arise. These sentiments are not the ebullitions of fancy, proceeding from the conjectures of a traveller, who paid a transient visit to a distant part of the kingdom: they are the settled opinions of the most enlightened, of the most patriotic, and best-informed gentlemen in this part of the empire, who have grown old in the exercise of promoting the prosperity of their country, and feel a deep concern in every measure that might produce

duce plenty and contentment around them, by increasing the comforts of life among their people.

No man, who is acquainted with the benignity of the British Government, will for a moment doubt that the same feeling heart, and the same paternal arm, which unceasingly extends its tender sympathy and bountiful offices, to so many millions, from the St. Laurence to the Ganges, will refuse to remove every obstacle which lies in the way of increasing the comforts of life, and of consulting the happiness of its home-bred and affectionate children. Happy Britons! venerate that Government, which only requires to know your interests, to promote them; your grievances, to remove them; your wants, to provide for them. Look around you, to every nation on earth; reflect on their condition, and you must say, that "the lines have fallen to you in pleasant places: there is none like you."

The road from Highbridge up Glenspian, and by Loch Laggan to Badenoch, and from thence to the counties of Moray, and Banff, may be considered as a continuation of the paths projected to the Atlantic Ocean: and by this line the treasures of the sea, that inexhaustible store-house of human food, may be conveyed speedily and plentifully into the very heart of Scotland, where its greatest breadth extends.

In order to reap the full benefit of the roads in the western parts of Inverness-shire, which have been already agreed upon, the communication between these and the adjacent districts of the county of Perth, ought also to be opened. Without doing so, the plan of roads, and the intercourse in that part of Scotland, would remain imperfect.

The road by Loch Laggan, in the first part of its direction eastward, points towards the north-west districts

tricts of the county of Perth; by which means, the intercourse of these districts with the West Highlands, might be rendered much easier, and greatly shortened. This is such a desirable object, and a matter of such beneficial importance, to all the counties of Scotland, which are situated betwixt the firth of Tay and the Murray firth, on the east, and to all the countries from Lochiel to Loch Carron, on the west, that it merits particular attention from me; in order to bring it, as clearly as I can, before the eye of the public.

This is by far the broadest part of Scotland, and yet the contiguous counties on the east and west, have hitherto been so much disjoined, in respect of mutual access, as though they belonged to different sovereigns. In all other parts of Britain, I suppose that a direct communication, by proper roads, has long ago been established, from the one coast of the island to the other; whereas any intercourse hitherto carried on betwixt the opposite coasts, in this place, has only been, either by means of long circuitous roads, or by paths, which at certain seasons are impassable, and at all times difficult and hazardous.

The road from the West Coast by Locharkaig, the road from the same coast by Lochgarry, the road from Caol-rea and by Glenelg, southward, all coincide at Highbridge, as a common centre, in their direction to the interior.

By the present mode of intercourse, there is no other road from Highbridge to the south-east, but by Fort William; then by the ferry of Ballachulish, and afterwards up the steep ascent of Glenco; to the King's House in the Black Mount; which, if I am not in a mistake, measures thirty-eight miles on land, besides the

the ferry of Ballachulish. Whereas, by following the Loch Laggan road from Highbridge, along the side of the Spian, a certain length, and then by taking the direction of Loch Treig, the distance from Highbridge to the King's House is no more than twenty miles. Here is a saving of eighteen miles out of thirty-eight (besides the hindrance of a ferry, and the steepness of Glenco) to travellers of every description, and especially to all the cattle from the Isle of Skye, and the immense tracts of country in the Western Districts of the county of Inverness, and adjoining parts of Ross-shire; which is equal to a full day's journey, in their way annually to the southern markets.

But if this business is to be rendered complete in the first instance, and these facilities in travelling brought to all the perfection of which they are capable, so as to require no future alterations; I would respectfully propose, that another *point* were fixed upon, as a common centre of different diverging roads, at the head of Loch Treig; and that the road should separate here into three branches; one directed from thence to the head of Loch Rannoch, by Leac-chaorin and Coirower, the distance being only about fifteen miles; another to the head of Glenlyon, being somewhat shorter; and another, as above-mentioned, to the inn of the Black Mount, which is distant from Loch Treig only about eight miles. By the first of these lines, the communication from the West Highlands of the counties of Inverness and Ross, would be established with Athol and Strathmore, and all the straths and glens connected with that part of Scotland; by the second, the same intercourse from the west would be opened to the lower parts of Breadalbane, Strath-Tay, and Perth; and

and to all the branches of these countries; and by the last, the access would be considerably shortened to the northern parts of Argyleshire.

The road from Highbridge through Glenspian, is already settled, and contracted for; and the lines now proposed are only a continuation of the same road, by taking a departure from the Glenspian (or Loch Laggan) road, somewhere at the head of that glen, in a south-east direction to Loch Treig, where it ought to divide into three branches, for the accommodation of the coterminous counties on the east and west of Scotland, in this place, which have hitherto been most unaccountably disjointed.

Were it not that the grand scale, upon which the Highland roads, in general, are at present carried on, is so apparently designed, not for a local or partial benefit, but connecting counties as well as districts together, these remarks might have been suppressed; but while the general good of the whole North of Scotland seems to be the enlarged view, which the Committee of Parliament seems to have adopted on the subject of roads; my duty, in this publication, imperiously calls upon me, not to neglect suggesting an improvement of such advantage to that part of the united kingdom; and the more especially, as I understand, since my journey was finished, that applications have been made, on the same subject, by persons deeply interested, to Mr. Telford, whose penetrating eye and comprehensive genius will probably perceive, in a professional point of view, not only the propriety of the measure now suggested, but will point out the minute detail thereof, and adduce additional reasons for having this communication opened.

Betwixt Inverness and Avemore, a little south from Freeburn inn, and in sight of Strathspey, improvements

ments of great importance were made lately upon the road. At one gulley, or deep ravine, called *Slochdmuich*, a bridge is thrown over, and the passage rendered easy, where much time was formerly lost, and much danger encountered, by the steepness of the descent upon one side, and of the ascent on the other, along the shelving rocks, on which neither men nor horses were secure against sliding headlong to the bottom. I am warranted to say, upon undoubted authority, that within thirty years, Sir James Grant of Grant has made upwards of forty miles of good road, by some assistance from the county, without any other aid whatever.

From Avemore to Pitmain is the worst military road in Scotland. It is up and down hill all the way; and large stones are jutting up half above ground, or lying loose in great numbers, in different parts of the road. The neglect with which this public and much frequented path is treated, leads to a supposition that the line is to be changed, which ought certainly, and may easily be done in most places, and the pulls made fewer and shorter; since there is not much fall in the Spey, which is adjacent and parallel to the road in all that distance.

In the county of Inverness the statute labour is commuted; which is not only beneficial to the roads, by putting it in the power of overseers to employ expert labourers, who are accustomed to that kind of work, but convenient for the tenants, by allowing them the command of their own time, in the summer season, for agricultural labour. An industrious farmer is never idle. He has always something needful to be done.

It is a pleasant duty, to pay a compliment to overseers of roads; much more so than to censure, or to find it necessary to give minute directions for their guidance.

dance. In the many hundred miles that I travelled in a part of the counties of Argyle, Moray, and Banff, the whole continental part of Inverness, and almost the whole of Perth, making observations and collecting materials for compiling this Report, I had opportunities of seeing the work carried on under the inspection of several overseers, in changing the direction, or repairing the old line of roads; but the instances in which these operations did not command my full approbation are so few, and of so little moment, as not to merit the attention of the Board of Agriculture.

SECT. II.—CANALS AND EMBANKMENTS.

THERE are no canals worthy of notice in this county, except the great Caledonian Canal, which will extend from the German Ocean at Inverness, to the Atlantic at Fort William, having eleven locks in each direction, from Laggan-ach-drom, the highest land in that line. The various Reports which have been published relative to this national undertaking, render it unnecessary for me to enter upon a long detail in this Report, which has already exceeded the limits I expected.

The principal embankments in this county, are taken notice of in Section 3, Chapter XII. to which the reader is referred.

SECT. III.—FAIRS.

WITHIN the bounds of the county, more than twenty fairs, or public markets, are held annually. Two are established at Fort William; one in November, and one in June, for the sale of cattle, sheep, wool, and lambs; where the prices are regulated, so as to become a rule of sale in this, and in the contiguous counties, during
the

the remainder of the season. At Portree there is an annual fair, but in other places of the Isle of Skye, some fluctuating meetings are held, by concert among the dealers, which are called trysts. At Fort Augustus these concerted meetings for shewing cattle are more regular, being fixed to hold annually upon the Mondays preceding the Fort William markets. The Trustees in Edinburgh, for the Improvement of Fisheries and Manufactures, advertise meetings at Fort William, and Fort Augustus, for shewing tups, to compete for prizes, in order to promote the improvement of the breed of sheep.

Five fairs are held at Beauly; in May, at Lammas, at Michaelmas, at Hallowmas, or the feast of All Saints, and in December. There are other trysts* in different places for the sale of cattle and horses, which are fluctuating. The fairs at the county-town are four; and the seasons for holding these are, July, September, November, and February; Campbeltown has one fair in autumn; and Castle Stuart has two in summer. Six fairs annually hold at Grantown in Strathspey, in which cattle and horses are exposed to sale, besides a variety of country produce. Kingussie, in Badenoch, has four fairs, which hold upon the second Tuesday of each quarter, old style. Another principal one stands upon the third Tuesday of June, where the farmers from Moray and Bamff, and other parts of the Low Country, come to barter meal for wool. Besides these fairs at Kingussie, which are of old standing, a new tryst was to be held at the same place in 1804, for the sale of black cattle, and sheep; which I learned since, was well attended, and will prove a great benefit to that, and other countries; because it is appointed at a proper

* A market not established by public authority, but by concert among the dealers.

time,

time, previous to the great cattle market in September, held annually at Falkirk, to suit the drovers from the North, when they would at that season be passing through Badenoch to the South Country.

SECT. IV.—WEEKLY MARKETS.

INVERNESS is the only place where regular weekly markets, according to my information, had been established, for the sale of meat, poultry, butter, meal, &c. Upon every Tuesday and Friday, these articles are disposed of in the county town. The villages at Fort William, Fort George, Fort Augustus, and Grantown, one might expect, would require a regular supply of various articles; yet the country around them is so plentiful in all the kinds of meat and fowls, that it seems they can be procured at any time.

SECT. V.—COMMERCE.

IN giving an account of the commerce of this county carried on by sea, our principal attention is confined to the ports of Inverness and Fort William. The commerce by land, with the South, consists of cattle, sheep, and wool. The numbers of cattle and sheep are so great, that I could obtain no data which promised any degree of accuracy; nor do I suppose that it is possible to be accurate. Different drovers condescended upon different numbers. Two persons could not be found to agree in the same account, because it was all conjecture. Were they to be stated here at some hundreds of thousands, many readers might think, that in place of giving a sober and true account of

my matters, I had availed myself of the license attributed to travellers, by dealing a little in the marvellous; and were they to be stated at a number which would appear moderate, this might be below the truth.

Into that arm of the sea, which divides the county of Inverness from Argyleshire, several vessels come to the quarry at Ballachulish, for slates and wool, which they carry to the towns situated on the banks of the Clyde, to England, and elsewhere. These vessels import coals, meal, and other articles into that part of the Highlands. At the port of Fort William, eight sloops are employed in the trade of Lochaber. The imports are chiefly coals and meal, and tar for smearing sheep. The exports are wool, and some oak timber, and bark. A few coasting vessels, carrying from fifteen to twenty tons, are employed from Arasaig to Skye, and the other Islands. These frequently import shell-sand from the Long Island to the main land, as ballast.

From the Manuscript Copy of a former Survey of this county, frequently alluded to, I insert a curious article relative to the trade of Inverness, which the Writer says, had been communicated to him by a respectable gentleman.

“ For many years previous to the Union, an important branch of the trade of Inverness consisted in the manufacture and export of malt and oatmeal to the Northern States of Europe, particularly Denmark and Norway; and the number of skins also exported, especially those of goats, sheep, deer, hares, foxes, badgers, and other beasts, was very considerable. The returns were chiefly in spirits, French wines, tobacco, tar, and some wood. This commerce was profitable to the county, the balance being invariably in favour of the Scottish merchants. The malting business must
have

have been upon a very extensive scale, as is evident from the many large buildings appropriated to the making of malt, which were extant in the memory of some of the oldest inhabitants still alive; and whose ruins are still to be seen. Fortunes, which even at this day would be esteemed considerable, were acquired in this trade; and some of the principal families in the neighbourhood, are descendants of the maltmen and skin-merchants of Inverness. From the certainty there is, of very extensive exports of malt being made from the port of Inverness, at such a remote period, it would appear that, in the northern counties, the state of agriculture must have been very respectable, at least a century ago, when the wants of the inhabitants were sufficiently supplied, and a large surplus exported.

"All the trading vessels belonging to Inverness, consist of about nine or ten smack-rigged sloops, from 70 to 140 tons. The merchants there, think it more advantageous to freight vessels, than to employ ships of their own, their stock being much engaged in manufactures.

"Many bags of flour used to be imported from London and Leith, but there has been none for several years past; nor is it probable that there will be any for some time hence, particularly if the sowing of wheat continues to extend, and the same attention is persevered in, which is now paid, to the grinding of that grain."

The present state of the principal trade at the port of Inverness, and Fort William, may be best learned from the annexed Table of Exports and Imports at these places, during the years 1784, 1794, and 1804; for which I have to thank the Honourable Board of Customs, and Mr. Cleghorn, their secretary.

Imports Coasting Trade at the Port of Inverness.

Years.	Coals.	Lead.	Wool.	Fish.	Flax and Tow.	Iron.	Cotton.	Oak & Birch Bark.	Flour.
	Tons, &c.	Tons, &c.	Tons, &c.	Tons, &c.	Tons, &c.	Tons, &c.	Tons, &c.	Tons.	Tons, &c.
1784	982	9 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$ Codling.	48 $\frac{2}{3}$	102 $\frac{1}{3}$	4 $\frac{1}{3}$	38	58 $\frac{1}{2}$
1794	851	7 $\frac{1}{2}$	2 $\frac{1}{2}$	16,000.	41 $\frac{1}{2}$	124 $\frac{1}{3}$	5 $\frac{1}{2}$	..	281 qrs.
1804	1170 $\frac{1}{2}$	60 $\frac{1}{2}$	13 $\frac{2}{3}$	580 barrels	128 $\frac{1}{2}$	394 $\frac{2}{3}$	119 bags	65	386 qrs.

Exports Coasting Trade at the Port of Inverness.

Years.	Wool.	Fish.	Linen & Wool- len Drapery.	Staves.	Fir Timber.	Deals.	Canvass.	Meal.
	Tons, &c.	Barrels.	Boxes.		Logs.	Dozen.	Yards.	Bells.
1784	1 $\frac{3}{10}$	12,222	267	8488	2905	95 $\frac{1}{2}$	701,385	1570
1794	24 $\frac{7}{10}$	60,644	13	..	57,817	5370	699,906	2568
1804	136 $\frac{1}{10}$	2174	358 trusses.	..	23,665	2510	644,400	44

Years.	Goat and Kid Skins.	Linen and Wool- len Yarn.	Sleep Skins drest.	White and Co- loured Thread.
				Tons, &c.
1784	2287	32,500 spindles	6374	65 $\frac{1}{10}$
1794	1705	33,400 spindles	1754	44 $\frac{1}{10}$
1804	124	972 bales	..	46 $\frac{2}{10}$

Imports Foreign Trade at the Port of Inverness.

Years.	Hemp.	Do. Tow.	Iron.	Flax and Tow.
	Tons, &c.	Tons, &c.	Tons, &c.	Tons, &c.
1784	80 $\frac{1}{2}$ $\frac{1}{2}$	79 $\frac{7}{8}$	39 $\frac{1}{2}$ $\frac{1}{2}$	63 $\frac{1}{2}$ $\frac{1}{2}$
1794	134 $\frac{1}{2}$ $\frac{1}{2}$	..	20 $\frac{1}{2}$ $\frac{1}{2}$	139 $\frac{1}{2}$ $\frac{1}{2}$
1804	296 $\frac{1}{2}$ $\frac{1}{2}$	148 $\frac{1}{2}$	20 $\frac{1}{2}$ $\frac{1}{2}$	..

Imports at Fort William.

In 1784, 5147 bolls oatmeal.

1794, 5190 ditto ditto.

1804, 9213 ditto ditto.

Exports at Fort William.

Years.	Wool.	Sheep Skins.	Herring.	Kelp.	Slates.
	Tons.		Barrels.	Tons.	
1784	94 $\frac{1}{2}$	..	..	..	..
1794	2504 $\frac{1}{2}$	769	782	39 $\frac{1}{2}$	..
1804	7173	..	..	78	2,029,900

SECT. VI.—FISHINGS.

THE inconceivable importance, in a national view, of the fishing of herrings and white fish upon the West Coast; the advantages to be derived, by opening the communication betwixt that coast and the heart of the county; the alterations that ought to be made in the present mode of executing the salt laws, in order to ensure the possibility of preserving the fish; and the vast fund of provisions flowing from this source, have all been incidentally mentioned, in the course of this Report, with an earnestness, which ought not to offend, even where some degree of blame is attached, because it proceeds from conviction, guided by humanity.

Besides the fishing upon the ocean, the arms of the sea, and the lakes and rivers, afford fish in great abundance. Loch Leven is occasionally visited by shoals of herrings; and they are frequently found in Lochiel. The salmon-fishing on the river Lochy, which is the joint property of the Duke of Gordon and Colonel Cameron of Lochiel, rents at 270*l*. On the river Morer salmon are also taken, which turn to little account, by the difficulty of preserving, and conveying them to a more populous country. Loch Ness, and the various waters that flow into it, afford salmon. In the lake, they are caught by the seine; but in the rivers, the fishes are disturbed by the floating of timber from Glengarry and Glenmoriston. At the house of Invermoriston, the manner of taking this fish is singular. About a quarter of a mile above the house, the river flows in a narrow chasm, between two projecting rocks. The fisherman seats himself on a cleft of this rock, right over the cascade, with a spear in his hand, which has a

line fixed to the upper end of the shaft, similar to the practice of fishing for whales with harpoons. Whenever the salmon makes a spring to gain the ascent over the cataract, the spearman strikes the fish, and lets the shaft go, holding only by the line, until the fish has exhausted his strength; then the spear and fish are thrown ashore by the stream, and taken out at the lower side of the pool. They are taken in such numbers, that Mr. Alexander Grant told me, he has known eighteen killed in this place before breakfast. At Killin in Perthshire, and upon the river Urchay in Argyleshire, I have known salmon caught in similar circumstances, and with equal peril to the fishermen.

The salmon-fishing at Beauly lets for 1260*l*. On the river Ness, the fishing, within these eleven years, has risen in value from 200*l*. to 1200*l*. This fishing is the joint property of the town of Inverness, of Mr. Duff of Muirtown, and of Mr. Baillie of Lees. Flounders and sprats are got at Beauly. Herrings visit the Murray Firth, and are often taken in great numbers; besides the white fish, which are often found as far out as Tarbetness, and caught by four boats on the Earl of Moray's property, by seven on that of Lord Cawdor, and by some fishermen in a village belonging to Mr. Duff of Muirtown.

In Strathspey, the fishing with the angle, in the parishes of Cromdale and Inverallan, lets at 10*l*.; that with the net, at 7*l*. There is a salmon-fishing upon Loch Inch, in Badenoch, which formerly was lett for a few pounds; but the proprietors use it at present for their own convenience and amusement,

SECT. VII.—MANUFACTURES.

FEW places are better situated for manufactures of various kinds, than the town of Inverness, which is surrounded by a populous country, and has a plentiful command of water, by means of a noble river, besides some other copious streams, sufficient to drive machinery of any magnitude; and in the vicinity of a rich grain country, on one hand, and of the Highlands, on the other, which abound with beef and mutton; and at the same time possessing the advantage of a safe harbour on an arm of the sea.

The inhabitants, who have of late years availed themselves of all these favourable circumstances, will no doubt derive additional spirit from the Caledonian Canal, which descends into the German Ocean very near the town. This great undertaking, which connects the East and West Shores of Scotland, in the North, as the Forth and Clyde Canal does in the South, will be a proof to posterity, of the enterprising patriotism of the present generation, and become a source of increasing wealth to future ages. What lofty conceptions must our grandsons have of the genius and liberality that guided the measures of the British Government, which, in the beginning of the nineteenth century, besides devising the means, and directing the operations, of the most expensive war ever recorded in the page of history, found resources for carrying on a canal of sixty miles in length, and of such a size, as to be navigable by frigates carrying thirty-two guns, and other vessels requiring the same depth of water. The world is astonished! Long may our friends continue

time to admire, and our foes feel envy, at the prowess of Britain!

In the year 1760, a manufacture of hemp was established at Inverness, by Messrs. M'Intosh, Shaw, and Co. for making bagging to pack wool, cotton, biscuit, pimento, &c. which, during the last twenty years, has produced seven thousand five hundred pieces, containing 375,000 yards. The number of persons employed within the house and without, in 1804, was 1500. The raw material is imported from the Baltic.

A thread *manufacture*, both white and coloured, is carried on in this burgh, of which a full account is given in the Manuscript now before me, which shall therefore be copied almost *verbatim*, as to this article, besides bleaching and tanning.

“ The flax is imported from Riga, Holland, &c. and the thread sold at the London market, to the extent of from fifteen to twenty thousand pounds sterling annually. This manufactory is of immense benefit to the country, as no fewer than six thousand women are employed in spinning thread, in the different counties of Inverness, Moray, Nairn, Ross, Sutherland, &c. under the direction of agents in different quarters, who give out the flax, receive the yarn, and pay the wages. Any woman may easily earn two shillings and sixpence per week, by only allotting such portions of her time to spinning as she can easily spare, when in health, from her domestic concerns. About a hundred men, and one hundred and fifty boys and girls, are employed within the house, dressing flax, making the yarn into thread, &c. the men earning from five to ten shillings in the week, and the women and children from two to four shillings. The company have also a bleach-field belonging to the manufactory, where about twenty
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men and women are employed. Besides the one already mentioned, belonging to the thread manufactory, there is an excellent bleachfield for whitening linen cloth of all sorts, on the banks of the river Ness, the property of Colonel Baillie of Denain. As this river flows from an extensive lake, and is seldom maddy with speats and floods, and never overflows its banks, the bleachfield is both a safe and a good one.

“There is another neat bleachfield at Grantown, near Castle Grant, on an extensive plain, by the side of a clear and copious rivulet, which has every appearance of thriving.

“Two tanneries, and one tawing-work, are established at Inverness, belonging to different companies. They import a great many raw hides, besides what are found at home; but they find the bark chiefly, as yet, in the county or neighbourhood. The tanned leather is chiefly consumed at home, but the tawed is mostly exported. These works, although they do not employ many hands, are nevertheless extremely beneficial.

“The country people in the Highlands, when they can escape the vigilance of the Excise-officers, give a rough tanning with the bark of the birch-tree, to many of the hides of their cattle, and thus supply themselves with a kind of shoes called *brogues*, sewed with leather thongs, instead of hempen thread, the better to resist the effect of rain and dampness.”

At the brewery lately established by Messrs. Imray, Young, and Co. I observed a singular pump, which brings the water up from the river Ness to their work, through leaden pipes, over a distance of nearly a quarter of a mile. The pipes run through several streets of the town, and the elevation to the loft of the brewery is twenty-eight feet, from whence the pipes take a perpendicular

pendicular ascent of twenty-seven feet more, to the top of the brew-house, making the elevation altogether fifty-five feet. The pump is able to force up forty hogs-heads in a day, when wrought by two men only; but generally no more than one man is employed.

Tiles and bricks are made at Newton. At Grantown, Sir James Grant has established a factory, consisting of eight or nine looms, besides a machine for carding wool, and a bleachfield, at a place called Craggan.

Since I was upon my tour in the county of Inverness, I have learned from undoubted authority, that a machine for carding and spinning wool is erected at Kingussie, in Badenoch, at the expense of Messrs. Anderson, Mitchel, and Carmichael. This company had engaged a man of the country to go to Perth, to be bred to this business; which is a more promising project than hiring an overseer from a distance, who might be troublesome to the company, either by extravagance in wages, or by dislike to the country. This beginning, of introducing the woollen manufactory into that district of the country, must no doubt induce gentlemen in various parts, to adopt the same plan, which will be highly beneficial to a country, where that commodity so much abounds. So convinced is the Duke of Gordon, of the utility of this manufactory to that part of his property, that he affords various conveniences to the Kingussie company, and thereby shews a laudable example to other proprietors, whose lands are covered with flocks of sheep.

The manufacture of kelp is a great business on the West Coast and islands; which was unknown, or very little practised, previous to 1735. The working season comprehends all the dry weather from the beginning of summer to September. The preparation and the mak-

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ing a ton of kelp, will cost from 1*l.* 15*s.* to 50*s.* according to the difficulty of procuring the sea-ware; and when the demand is brisk, the same quantity will fetch from four to eight pounds. The price is very fluctuating.

During the last war with France, a few years ago, it sold at 14*l.*; at present it has fallen to its former price. This fluctuation is occasioned by the casual importation of Spanish barilla, which is a vegetable that is burnt for soap, and sold at 25*l.* the ton.

Kelp is made, by cutting sea-ware of all kinds at the age of two or three years; but it is more profitable to cut it at two, because, in this manner, it grows thicker and closer; and more kelp, upon the whole, is produced. The kelp-cutters tie it with ropes, in large bunches, waiting the approach of the tide, by which it is generally floated ashore, or sometimes carried on horses from amongst the rocks; then it is spread to dry, for two or three days, and afterwards put into the kiln, which is made on a piece of smooth or green ground. This kiln is constructed by a row or two of large loose stones piled upon each other: it is generally ten feet long, and two feet and a half wide; and the height of the sides is about two feet. Then the dry ware is thrown into the kiln, and set on fire, and fed, till the kiln be full of the ashes. The kelp-iron is then used for working the ashes. This instrument consists of a wooden handle, similar to that of a spear or a hay-rake, and of such a length, that a man can work it, standing upright: the shaft is fixed into the socket of an iron head, which is six inches long, and three inches broad, and bent at right angles immediately below the socket. The kelp is thus wrought into a liquid mass, without intermission, until it become stiff, which

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is very hard labour; then another stratum is laid above the first, which is burnt, and wrought in the same manner; together with a third, and sometimes a fourth, until the kiln be filled, which generally produces a ton of made kelp, and sometimes more.

It is proposed, in some parts of the Highlands, to build kelp-kilns with stone and lime, as has been done already in Airshire, particularly on Colonel Fullarton's estate, where the sea-ware is burnt into kelp as it comes out of the water, without the tedious process of drying. The expense of this kind of kiln is said to be about 250*l*. But the obstacle which may probably retard the introduction of this mode of burning kelp into the Highlands, is the great quantity of coals necessary to burn wet kelp*.

The domestic manufacture of this county is very considerable, because upwards of sixty thousand of the inhabitants, out of a population of seventy-four thousand, may be said to be clothed by their home-spun and home-wrought stuffs of various kinds, excepting bonnets, handkerchiefs, and a few more articles for female, or Sunday's attire.

The house-wives, and their daughters, and servant-maids, are more industrious than one could suppose, in a country where the pastoral habits and employments still continue so much to prevail. Their cloths are woven by the country weavers, and dressed by the

* From the only experiment yet made, of using the sort of kiln mentioned here, there is reason to apprehend, that the expense will exceed the profit that was expected. It is intended to try metal beds and sides, in place of the earth and stone troughs, in which the ware has hitherto been generally burnt, in the hope that the kelp will be more pure, as some of the earth and sand unavoidably mix with the ware, in stirring it, in the present process.—*Sir John M. Murray, of Laurick.*

dyers in the neighbourhood. Their tartans and plaids are universally admired for fineness of fabric, brilliancy of colours, and the taste displayed in the variety of setts or patterns. This display of ingenuity and industry, is by no means confined to the common people. Many of the ladies of fortune understand the art of dyeing to great perfection, not only with respect to the more easy and cheap colours, but even as to the more delicate and vivid kinds, which they often execute full as lively and permanently, as the most skilful and experienced dyers in the great towns. To enumerate all the instances of these thrifty habits, would be endless. I shall mention only one or two, as a specimen of the rest. At a gentleman's house in Lochaber, I saw two hearth-rugs of the most beautiful mixed colours; one dozen of chair-covers woven, and another dozen sewed by a stitch called vigo (well known to ladies), having five different shades of green, four of red, three of purple, a black ground, with a yellow and white edging; all spun, and dyed, and sewed in the house. The whole drawing-room furniture, sophia and chair-covers, was of the same kind: sixteen carpets, of different patterns. The bed and table-linen was countless; as also the blankets, which, in warmth and fabric, were equal, and in fineness, superior, to those sold in the great towns, under the name of being imported from the South. Shawls and gowns of twisted worsted, and tartans of the most lively colours, beautifully diversified, and various other articles, all spun and dyed in the family, under the inspection, and by direction of Mrs. Cameron of Fasfern.

In the opposite side of the county, Mrs. M'Pherson, at Mains of Ardersier, near Fort George, besides many other articles of industry, which it might be thought tedious

tedious to enumerate in detail, sends every year to the bleaching, between three and four hundred yards of linen, spun in her own house, from the flax raised by her husband. The quality of the cloth, is from eleven to nineteen hundred reed; in weaving.

Several other ladies might be mentioned, who are distinguished for their industry, some in one line and some in another; but I may have trespassed already too far, in mentioning any names, without permission. My only apology is, a desire to point out to persons unacquainted with the Highlands, that even the most Highland parts of it, are more civilized than perhaps they have ever supposed, which I could not do, without quoting particular instances, however few.

SECT. VIII.—POOR.

IN addition to what was said on this subject in Chapter IV. Section 3, relating to poor's-rates, it seems to be only necessary to mention in this place, that there are two benevolent or friendly societies in Inverness, which have established funds for the support of their own poor; and it were devoutly to be wished, that a society of this nature were established in every parish in Scotland. Heritors who do not reside within the parish where they have property, or who do not choose to attend church, though they do reside, may divest themselves of all concern in the maintenance of the poor, unless legal measures are taken to raise an assessment according to the valued rent, one half payable by the heritors, and the other by the tenants; but this mode of supporting the poor, is so uncommon and so

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unpopular in Scotland, that very few Ministers choose to have recourse to that expedient, except in cases of extreme necessity. Through this neglect, the poor are often reduced to severe straits, by being worse provided for, than the law of the land ordains*. If too much money is raised in England for this purpose, and complaints frequently made against the mode of its application, we may say that too little is raised in Scotland, because the amount of this money is generally voluntary.

I cannot expect to be listened to with more attention than any other person, who may propose to men to part with their money from motives of pure benevolence and compassion; yet methinks a proposal occurs, which ought to be made, and which the most selfish and niggardly will find it their interest to adopt. By laying out a penny voluntarily, they may save, by law, a pound.—A hard-hearted heritor says, let us hear his proposal of saving a pound by giving a penny.—Raise such a sum upon the valuation, as would suffice, or was actually expended, in subsisting the poor of the parish, in such a year as 1799 or 1800. Lay this money up in a fund; apply to the parishioners, either as donors or as members, to subscribe to this fund: the members to pay a mite at stated intervals, under certain regulations; and after a certain period has elapsed, to be entitled to receive support, in case of necessity, according to the class they had entered. A detail of the regulations, of the mites payable at intervals by the members, the amount of the supply to be drawn by the different classes, and the mode of management,

* It is believed, that there are very few instances, if any, where the clergy and proprietors neglect the poor.—*Sir John M. Murray, of Lanrick.*

cannot be given here, but may be seen in the printed regulations of similar societies, established in many of the southern parishes and villages. Were Maryburgh, and Kingussie, and Grantown, and Campbeltown, and the village at Fort Augustus, to take the lead in this benevolent scheme, and to excite a range of country contiguous to each, to join them; in a few years the salutary effects of such an institution, would induce other places to follow the good example. The small contributions would never be felt; the certainty of aid in the day of distress, would gladden the heart of every contributor, under the toils of life; and by a prudent management, the funds would accumulate to ensure success.

Were such a scheme established under wise regulations, the poor, in process of time, would be much relieved, if not rendered independent entirely, of begging. All future assessment would, in that event, be saved to the heritors, to which they are every year liable, as matters are situated at present. In many places of the southern counties of Scotland, the benefit of these funds, or boxes, as they are called, has been extensively felt: nothing is wanting to the establishment of one in any parish or village, but a beginning; and what parish is so forlorn, as not to be blessed with many persons of humanity, from among the residing heritors, the Minister, and respectable farmers or tradesmen, who feel for the distress of the aged, the sick, and the poor!

This Section shall be concluded by an account of the two Societies of this kind at Inverness.

1. *Clach-na-headin Society*, consists of 161 contributors, all inhabitants of the town: each pays 20s. into the common box at his admission; 1s. on the first Monday of every month; 1s. on the death of any member;

ber; and 6*d.* at the death of any contributor's wife.—In return, when the contributors become old, sickly, or unable to work, they are allowed 6*s.* a week during the first six months of their indisposition or inability; and 4*s.* a week afterwards, while they continue unable; or during their lives.

2. *Haugh Society* is formed much upon the same plan; but only one half of the aforesaid small sums is paid in; and the returns are in proportion.

SECT. IX.—POPULATION.

IN various forms, this subject has come under review in the preceding pages of this Report; and therefore, were it not for its high importance, might be past over in this place, with only a few cursory observations. The population of any country, under wise and salutary regulations, constitutes the strength and sinews of that country. An industrious people will render the desert a fruitful soil; and without inhabitants, the most fertile land will soon become an howling wilderness.

In every kingdom, where the government watches over the prosperity of the people, the state of population forms an object of principal attention. Its increase is cherished by every practicable mean, and its decrease is counteracted by every expedient, consistent with the privileges of the people. It is a good presage, to find that the government of this country is now awake to the situation of the Highlands of Scotland, in this respect. That vigilance, which no occurrence can escape; that fortitude, which no difficulty can deter; that perseverance, which no obstacle can withstand; and that be-

ficence, which is never wearied nor exhausted, have now happily taken a friendly concern in the population of this part of the empire. What has been done, is a symptom of the completion of what remains; a sure earnest, that in due time, the population of the Highlands will be rendered as numerous as the circumstances of the country will admit; and if it be my good fortune, to succeed in pointing out the remedies which may prevent depopulation, by shewing the means of increasing the comforts of the common people, and strengthening their attachment to their native country, my duty is performed; the execution is left to others. The application of these remedies, and the effect of these means, are beyond my sphere. They are in good hands.

The only districts in the county of Inverness, where population, during the last 20 or 30 years, has increased, are Urquhart, Strathglas, the vicinity of Fort George, the estate of Grant, and a part of the Aird. In many places, it is said to be stationary; but in the greatest proportion by far, of the county, it has evidently been on the decline. Those who wish to blindfold a stranger, and the public, in this matter, take their criterion from the returns made to Doctor Webster in 1755, which they compare with the returns made to Sir John Sinclair, about fourteen or sixteen years ago; or to the returns made to Parliament within these seven years.

Without combating the accuracy of the Doctor's estimate, which many causes conspired, to render doubtful if not incorrect, the stubborn facts, which obtrude themselves on the observation of any man, who examines the state of the country, must convince him, that many parts of the Highlands are, at this moment, less populous

populous than they had formerly been. Whole hamlets in ruins ; two or three shepherds, where a dozen or more families (60 souls) were wont to reside, are circumstances too strong to be explained away by any reasoning, however specious, and too melancholy, not to move the pity of those, who reflect on the fate of the unfortunate families which had been expelled. What pangs must they have suffered, in leaving the place of their nativity, where their fathers had lived for countless generations ! what fears and forebodings of misery must have haunted them, concerning their future destiny ! I saw the beacons and cairns, which great multitudes of collected emigrants had set up, as the places of rendezvous, where they met to have, for a few hours, the company of their weeping relations who remained behind, and whose faces they were never more to see ! to bid a final adieu to their cruel country ; and from which they might have a last view of the lands where they and their children drew their first breath !

In the Highlands, depopulation has made great havoc indeed. This monster has traversed almost every corner : his gigantic strides have reached from sea to sea, overthrowing cottages and farm-houses, and without mercy driving the miserable inhabitants before him, wherever he has appeared.

Some causes conspired to obstruct or alleviate the full effects of this evil, otherwise depopulation would have made still greater impression on the shire of Inverness. The early age at which the women generally marry ; their having numerous families of children ; the care taken of them in child-bed ; the salubrity of the air, which contributes to the healthiness and vigour of the children ; the exercises of the mothers not being of a sedentary nature, which invigorate themselves and

their sucklings; the prevalence of inoculation for the small-pox; the extensive culture of the nutritious potatoe, which may be said to be as extensive as it is abundant; the regularity of the morals and harmless lives of the inhabitants, in strict conformity to the laws of the land, which prevents exile or capital punishments; and above all, the fostering care of some proprietors of humanity;—these are some of the causes which have counteracted the progress of depopulation; have kept it within any moderate bounds, and rendered it apparently less desolating than it otherwise might have been. In a tract of country, whose extent is supposed to be between four and five thousand square miles, and the people also estimated at 74,000 souls, when the proper allowance is made for the population of the towns of Inverness, Maryburgh, Grantown, Campbelltown, Kingussie, and the other villages, the population in the open country is far inferior to that of a well-inhabited country, even in the natural circumstances of Inverness-shire. None can expect, that, where vallies and hills, and arable and pasture grounds, are intermingled, the people can be so numerous, as where the arable land prevails; yet mountainous districts are not deficient in the means of human food, and ought not therefore to be accounted so barren as their appearance would indicate. It is stated, that the present population is 12,000 more than the number returned to Doctor Webster in 1755; but allowing this to be the case, the general improvement of the soil, and the other means devised for the support of the people, since that period, might be expected to lead to an increase of inhabitants double that number, or more. The culture of the potatoe, half a century ago, was very limited, and in many places of the Highlands, that plant was hardly known,

known, except as a rarity, in the gardens of the wealthy, and other persons of taste. At present, the culture of the potatoe is so universal, and upon so extensive a scale, that one half of the inhabitants in this, and all other counties in Scotland, live mostly upon that valuable root, during eight or nine months of the year. In the Highlands, this is below the average. What I mean is, not that one half of the inhabitants of any country eat potatoes alone, nine months, and nothing else, and that the other half never taste them. What I mean is, that if the population of Inverness-shire is 74,000, the potatoes now raised in that county, and consumed by the inhabitants, is annually equal to the sustenance of 37,000 persons during the space of nine months. Take a fourth part from this number, to balance the quarter in which I suppose potatoes not to be used, and there remains 27,000, corresponding to the individuals, whose support, from one end of the year to the other, may depend on the quantity of potatoes at this period raised in the county of Inverness. It will easily occur to any person, who pays attention to what is said above, that I have thrown away fractions, which would favour my own argument; and that I have supposed this root to be in season only nine months; whereas I have seen both the old and new, on the table at the same time, even among the wealthy: and what the rich do, in preserving a rarity to gratify their taste, will not the vulgar do, in a matter so easy, to satisfy the cravings of hunger? There remains not a doubt upon my mind, but that many more of the inhabitants than one half, at an average, are to be estimated as deriving food, during nine months, from this best of roots. It enters into all families, appears every where, is daily brought

forward on the tables of the rich and of the poor, and is relished by all classes, as palatable and nutritious.

When one beholds great tracts of the country, comparatively without inhabitants, where the appearance of the ground demonstrates that the farms had once been well peopled, such a person might be led into a mistake, and form an erroneous opinion, by supposing that the county is *less* populous at this day, than in the year 1755. But if it be a fact, that some tracts are desolated, it is also a fact, that other places are more crowded; nay, some places are now inhabited, where no human creature lived at that period; and where the people are crammed together, they must have recourse to the means of supporting themselves, mentioned in this Section. Unless we pay attention to this circumstance, and consider the present mode of drawing more subsistence, than formerly, from the ground in cultivation, we might be in danger of concluding rashly, that the population is, upon the whole, diminished. The quantity of human food produced upon the desolated farms, is sent to market, in some cases, at the distance of hundreds of miles. But to compensate this defalcation, more food is raised, by extending the culture of potatoes, where inhabitants have remained on the old farms; or new settlers have been set down on ground that had not been at any former period in cultivation.

The least acquaintance with the history of the Highlands of Scotland, since the year 1770, must convince any man, that these regions are less populous than they might have been, in the progress of society. The system of management adopted upon several estates, had an evident tendency to produce this effect. If no other

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object was kept in view, but to produce the greatest possible rent, it required no great depth of understanding to find out, that the rearing of bestial in place of men, was the most lucrative speculation. Black cattle and sheep would travel southward, and send home guineas in return; whereas a stock of the human species afforded less cash, but more gratitude, more attachment, more protection, more honour. The former mode of stocking gratified the cravings of luxury, or fostered the propensities of a miser, and rivetted the sordid passion of accumulation; the latter cherished the noblest principles of man, which consist in the imitation of the Deity, the desire of doing good.

This outrage against the human race, where it prevailed, hath invariably produced its natural consequence upon their minds—aversion, hatred, indignation, contempt. Some of the Chieftains themselves have given the death-blow to Chieftainship; they have cut the cords of affection, which tied their followers to them, and to one another; and with their own hands, have torn to pieces the bands of consanguinity betwixt them and their tribes; and yet they complain of the defection of these tribes, which, with their eyes open, they have driven from them!

A very moderate acquaintance with human nature shews, that the strongest connexions among men, when cruelly and suddenly torn asunder, invariably produce the most violent animosity and rancour. No dissensions are more fierce, inveterate, or permanent, than those that arise in families, and between the nearest relations. Where was there a connexion more powerful, than that which subsisted betwixt a Chieftain and his Clan? Upon every emergency, they rallied round his castle, as the peers of the realm around the throne; they

they were the foremost in all his enterprises, and ready to shed the last drop of their blood, in defence of his person, or his fortune, or his honour. But all this charm is dissolved. No sooner had the Chieftain grasped the magic rod, whose tip was gold and whose shaft was hemlock, than the phantom of Chieftainship*, which

* Look back, however, to a few lines above, and the learned Author's proof will be found, that Chieftainship gave substantial power, which, properly directed, would have been far more valuable to the individual, and to the State, than money. It is now, indeed, a *phantom*; yet not the Chieftains, or proprietors, but controlling powers, have rendered it so.

An ancient Highlander having been asked, some considerable time ago, by a southern visitor, "What is your rental?" instantly answered, "Five hundred men, Sir!"—He did not count by money. It was the delight and pride of men of property to cherish population; but as it became an object to subvert the patriarchal system, it has been accordingly annihilated, through a policy that did not foresee, that by improving and preserving this fabric, and conciliating the Chieftains, the State could more easily call forth hardy military bands, knit in ties of affection, than by the miserable shifts of crimping and jail-sweeping.

Formerly, men who had followers, might have the honour of leading them, in the battles of their country, and they had the means of providing for the cadets of their families, and to reward attachment, by Commissions in their Family Levies. These advantages have been all withdrawn; and it has been made the interest of proprietors to diminish population, and increase their money rental. It is but of yesterday, that a Nobleman, of this vicinity, raised three battalions on his own estate; yet he was obliged to enter as an ensign in the service, to entitle him to progressive military rank; as, if by passing through the hands of an army agent, his military genius could be illumined! Thus reduced to the level of the meanest person, who, to the degradation of the service, may purchase a Commission, for a trifle of money, where is the excitement for men of rank and property, to rear extra population, for the public, at their private expense?

It may be a good general rule, that Officers should be trained through the various ranks; but this principle has been pushed to the extreme. Salutory exceptions might, and should, be made: they ought not to be numerous,

which had made the head of the Clan look bigger than other men, has evanished. And two doleful effects have followed this fatal touch; effects never to be retrieved: himself is now dwindled down to the size of other men, and is no longer the illustrious object of admiration: the people upon his property are chased away from the lands, which their ancestors enabled his family to wrest, in former ages, from their less potent and less warlike neighbours.

Emigration has been the consequence of this sudden and eager grasp for wealth: many thousands of those, who had substance, have crossed the Atlantic: many more have travelled Eastward and Southward, to the manufacturing towns, in quest of employment and of bread. Of the numbers, who have been driven by oppressive avarice from the Highlands of Inverness-shire, it was impossible to obtain an accurate account. In some districts they were more, in others less, accord-

numerous, and, under proper regulation, might, to a limited extent, be always rendered beneficial to the State.—If emigration be an evil, and a great one it certainly is, let not the Chieftains, or landed proprietors, bear a blame that does not belong to them. When the great CHATHAM, the father of the illustrious PITT, announced where he had found martial merit, did he not mean, that the tribes to which he alluded, should be cherished by the State? Yet where are the rewards for maintaining population? Does it consist of the millions of money sent to foreign lands for our sustenance, whilst we have millions of acres of excellent uncultivated land in the united kingdom, upon which additional millions of warriors might be reared, by the application of these bounties, and other regulations? Let then our losses by emigration, and the difficulties in raising men for the army, be placed, so far as respects the Highlands, to the account of successive official men, whose policy has overset the system, which had for ages preserved the population of the districts alluded to by the learned Author.—*Sir John M. Murray, Bart.*

Wherever the fault is, the Highlanders suffer in the meantime; but Britain must feel the loss of them in the end.—*The Author.*

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ing to the temper of the landlord; and the object that engrossed his attention. Had the examples, which in some cases were set before them, actuated the other gentlemen of the country, they might, by a little reflection, have increased their rental, and preserved their people. Comparisons and personalities must be avoided; but instances are many, upon some properties of all descriptions, which demonstrate with the clearness of a sun-beam, that the pecuniary interest of the landlord is not incompatible with the accommodation of the people upon his property. A progressive rise of rent is far preferable, on both sides, to a sudden and an excessive rise. The narrow glebs, and other high situations, where grain will not ripen, are fit only for the grazing system; and a grass farm is best managed, and will fetch a higher rent, in the occupation of one tacksman. Perhaps two or three tenants must have been removed from this grazing farm. But is a proprietor, who compassionates the situation of these tenants, under the necessity of sending them away into the wide world? By no means. He breaks down one of his arable farms into lots, suited to the extent, and adequate to the stock and sustentation of the new settlers whom he wishes to place there, from one or more of his grazings. Every man sits down upon his lot, and the hill-grass annexed to their farm, they occupy by a joint and common stock of sheep. This mode of accommodating the people on a property, has been treated of more largely elsewhere. It is only glanced at here, to shew what has been put in practice in a few places, and may be done on every property, to attain the desirable ends of *gaining a rise of rent, of preserving the population, and of putting an end to the direful necessity of emigration.*

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'This is perhaps the most proper place, to enrich my publication with another extract from a letter of George Dempster, Esq. of Dunnichen.

"In regard to the main point, the *salus populi*, I could have wished you had been more than sceptical, in your Report of Perthshire, in your difference of opinion from the sheep-farmers; for if I can distinguish a true from a false opinion, you had truth on your side.

"I doubt if a Laird, any more than a King, can, without tyranny, expel the people; dominion implying preservation, not destruction. If, however, it were asked, May not a proprietor stock his estate with sheep, and remove tenants at his will? I answer, Yes. But where the duty of the proprietor, to preserve the people, ends, *there* that of the Government begins. As it may contribute greatly to the interest of the State, to preserve people, who are burthensome to the individual proprietor, whose lands those people occupy, the statesman (if a patriot also), is bound to interfere, and to propose, that the whole State shall bear the expense of what the whole is benefited by. The individual ought to be amply indemnified at the expense of the whole, and the people induced to remain at home, (which God knows they leave with reluctance, and sore hearts), by being secured in their possessions, not only they, but their posterity, while there remains a vacant and uncultivated spot in the kingdom, which they would incline to improve and live upon. Is not the driving away of whole bodies of men, women and children, from their habitations, a species of massacre? a repetition of Glenco, without bloodshed!

"How soon may our powerful, and ambitious, and restless Continental neighbours, render the military
system

system as necessary to us, as it was to our ancestors? What a *cunabulum gentium* might not our Highlands prove? Where will it find inhabitants, but those born in it? *Quis, Asiâ, Africâ, aut Italiâ relictâ, Germaniam peteret, nisi si patria sit*.*"

It remains not with me to answer the following questions: Whether, in such a state as Britain, has the Government any controul on the proprietors of its soil, in the manner of using that soil?—Can the Legislature say authoritatively, you must not diminish the numbers of mankind upon your estate, beyond a certain proportion, of which the Government, not you, are to judge?—The State affords protection to you and to all good subjects, in the enjoyment of property, from enemies both foreign and domestic; whether is this protection a reciprocal duty, or is it not? If it be a reciprocal obligation, what is the return that is due from you? whether is it money or men? If it be money alone, cattle can produce money, so long as a market can be found, and mercenaries can be hired. But what if the King should be obliged to say, I can find no mercenaries willing to enlist, nor can I trust them, and I cannot fight my battles by my own arm; I must have men. Here is the rub! What answer to this demand, will the landlord maket, who has his property in the hands of a few shepherds, with a mul-

* "You may give my translation in a note, which is—Who but a Highlander would settle in Lochaber?"

† One remark upon the queries is obvious, namely, that the coercive power of the State ought to apply equally to every part of the kingdom; and as the arable are capable of maintaining more men than the grazing districts, the operation of such a law ought to bear upon them in proportion. The tables would then be completely turned.—*Sir John M. Murray.*

So much the better.—*The Author.*

titude of sheep? Has the Legislature the same concern for the preservation of the country now, and the same coercive power over the men of property, which it exercised in those reigns, when uninhabited houses in England subjected the proprietor, by law, to certain pains and penalties? and when it was competent for the nearest heir to strip any gentleman of his estate, who obstinately contravened the enactments of those salutary statutes, that counteracted the decrease of the population?

Ere it be too late, let us guard against the infatuation, which, in circumstances similar to ours, relating to depopulation, alarmed our wise forefathers, and induced them to enact these laws: let us apply a remedy, before the disease become incurable: let us, with the penetration natural to us in other cases, foresee the danger, at a distance, and provide against it, by every legal and constitutional measure in our power; and having done so, we shall, with a consciousness of having performed our duty, meet every crisis with undaunted firmness and magnanimity; and look up with confidence for the protection of Heaven.

CHAP. XVI.

OBSTACLES TO IMPROVEMENT.

IN most of the Highland counties, the circumstances which obstruct improvement are so similar, that when a correct account is given in this respect, of the situation of one, with very little variation, it suits every other county. What has been written therefore on this subject, in my Report of the Agriculture of Perthshire, corresponds very nearly to the situation of the county of Inverness, and therefore brevity will be the more studied in this part of my subject.

1. *Townships* prevail in both counties; those groups of houses, in which several farmers and cottagers are huddled together, are a bar to the improvement of any property, and a great reflection upon the judgment of the proprietor.

2. *Runrig*, as it is called, or having the land in alternate ridges, belonging to different tenants, is a consequence of townships. This arrangement must have arisen from a confused intention of doing equal justice to every one of the tenants, in these farming villages, by bestowing upon them all, the same number of ridges near their houses, and the same number in remote situations. To render the absurdity of this mode of occupying land more complete, if possible, these ridges were, in some cases, frequently exchanged;

so that one man possessed the following year, the land which his neighbour had occupied the former.

In some parts of the Highlands, I have seen the land first-ploughed, without leaving any boundaries, except the furrow, betwixt the ridges; then the field was divided, by putting small branches of trees into the ground, to mark off every man's portion, before the field was sown. No man knew his own land, till the seed was to be cast into the ground; and it became impossible for him to have the same portion of land any two successive years. This mode of division is analogous to what Cæsar tells us, prevailed among the ancient Gauls; which must absolutely debar the very least improvement.

3. *Servitudes* in seed-time and harvest, are hostile to the improvement of any property. It is easy to conceive, that no farmer can go on with spirit or eagerness, in the operations of his own farm, while he knows that himself, and servants, and horses, are liable to be called away by his landlord, in the most critical season. Where the climate is so variable, the winds so boisterous, and the rains so frequent, that every favourable moment ought to be seized; what a painful reflection to a poor man, to see his corn shaken with the violence of wind, or his hay and crop rotting under a deluge of rain in the fields, and the whole labour of the year perishing, by having missed the opportunity of saving his crop, while he was compelled to work for his Laird! Will any man believe, that these servitudes are rendered still more servile and galling, by the people being under the necessity of carrying food from home, for themselves and horses? This is so incredible, that it would not be taken down

upon less authority than the Manuscript Report now before me. We are told that servitudes are going into disuse. Soon may they be entirely abolished, never to return!

4. *Thirlage* is a formidable obstacle to improvement, because the industrious man pays more in all cases, than the sluggard. Multure is the payment of a reasonable quantity of grain or meal to a miller, for his trouble in grinding the farmer's corn; but might it not be put under regulations, very different from what have hitherto prevailed? In these, the advantages of the proprietor, of the tenant, and of the miller, ought all to be attended to. No mill should pay rent. The district of the farms bound to a mill (provincially, the *sucken*), should have the rent of the mill divided among them, and be relieved entirely from thirlage, that the farmers might be at liberty to go with their grain, where they found their work executed in the best manner, and themselves treated with most discretion. A proper compensation to the proprietor or miller, for upholding the fabric of the mill, for the waste (provincially, *tear and wear*) of timber, stone and iron, and for labour, can easily be ascertained in money or in grain. Whereas, according to the ancient mode of exacting multure within the bounds astricted to a mill, the farmer pays three or fourfold, for all the services he receives; and the more he improves his ground, that it may produce heavier crops, or the more waste land he reclaims, the oftener he is compelled to pay this exorbitant duty. By the notes taken in the Aird, in Badenoch, and some other places, I find that the seventeenth part of all the grindable grain goes to the miller; in Strathcric, the
eighteenth

eighteenth part; in Strathnairn, the thirteenth part; or, as it is expressed by a gentleman of that country, the thirlage is one in seventeen; besides one peck and a half of meal out of every sixteen pecks of shilling*, which is emphatically called the miller's *knave-ship*.

5. *Shortness of Leases*; in most cases, and in others there being no lease at all, are circumstances very injurious to the improvement of a country. Where leases have been granted, their duration is generally five, seven, nine, fifteen, or nineteen years. The longest term of these is given by M'Intosh of M'Intosh. The greater number by far, of the occupiers of the soil in this county, have no lease at all; they possess their tenement, whether large or small, only from year to year. If a man happens to be poor, he must continue poor to the end of his days. This is the ill-fated condition of the lower ranks of tenantry, and of the whole race of sub-tenants. Unless they are submissive in the performance of every species of drudgery; and seemingly past feeling, disposed to bear with patience every exaction, however arbitrary, or capricious, or oppressive, they are turned off at the first term of removal. The heart of the humane bleeds over their misfortunes; to see their faces daily held to the grind-stone of oppression, without being able to afford them relief. Alas! what can the sighs or the compassion of a stranger avail; in removing the iron rod which holds them down! Land occupied upon no other condition than a yearly tenure, never was, and never will be, improved. Even those in the rank

* The name for any grain, after the husk or shells are taken off.

of farmers, who are in this miserable plight, can feel no stimulating motives to rouse their exertions to meliorate their own condition, or to render the estate on which they exist, more productive: and as to the sub-tenants, who live under the tacksman, their condition, if possible, is worse. Their spirits are sunk, and they look upon themselves as mere beasts of burden; they put one in mind of the *adscripti glebæ*, under all the horrors and servitude of the feudal system; of which their conditions are literally the remains.

Were the owner of an estate, once for all, to establish settlements for labourers, with such conveniences as might be deemed necessary for poor families, at proper distances from one another, on his estate, every tacksman, or other person, would have access to these labourers, when requisite, for their operations; and the surplus time of these settlers, beyond what their own small tenement demanded, would be employed to their emolument, in earning wages from their more wealthy neighbours.

In some such way as this, the tacksmen might be accommodated with the labourers, whom their work required, upon much easier terms than by hiring young men, equal to the whole of their labour, who live in their families, and whose food and wages were going on without intermission, no less in idle time, or wet weather, than when the weather allowed them to be usefully employed: and on the other hand, the labourers would find it their interest to merit a preference at the hand of their employers, and would have it in their power to possess some of the comforts of life, which might render their condition less miserable.

6. Distance

6. *Distance* from manure, is an obstacle to the improvement of a country, which cripples the efforts of the rich, in their desire to render the soil more productive, and amounts to a prohibition against the exertions of the poor, except in the judicious application of what manure can be easily procured, by compounding the dung of their cattle with other substances. The influence of the few lime-works the county is furnished with, is less felt, and is less diffusive than it might be, by the scarcity of fuel in some places to burn it.

It has been taken notice of, that the improvers on the East Coast, make use of lime which is imported: the effects of this practice are so beneficial and so evident, that this kind of lime will soon be carried farther into the interior. What an unspeakable advantage to all the adjacent Highlands in this respect, where fuel is scanty, when vessels will carry lime along the canal, or when some method will be devised for pounding the raw limestone into manure!

7. The *non-residence* of many of the most opulent proprietors, is no small hinderance to the improvement of the estates they hold in the county. Every aspiring tenant is ambitious to distinguish himself in the line of his profession; and no eye can witness his enterprise, of which he is more desirous than that of his landlord. The occasional remarks, and the animating approbation of the gentleman, on whose property he and his fathers have lived, must be a spur to every farmer who has an honest desire of praise. In proportion to his opinion of his landlord's judgment, to his esteem for his valuable qualifications, to his veneration for the family, his gratitude for any marks of

favour he may have at any time received, the farmer will be the more emulous to appear worthy of still higher distinction, by superior industry and intelligence, in the management of his possession. Unless a landlord knows the industry of any of his people, he cannot approve of it; unless he knows the value of a particular tenant, he cannot bestow marks of distinction with judgment; if therefore he resides mostly at a distance from his property, his tenants can have no hopes of his applause for doing well, and no fear of his censure for acting wrong. They are entirely deprived of that stimulating principle, the approbation of the man whose property they possess, which, together with a regard to their own interest, could not fail to render their efforts irresistible.

But the personal absence of the landlord, is not all the loss which the estate sustains: the money arising from the property is spent from home; that wealth, which the land produces, is not applied towards the increase of its improvement, nor to the increase of its fertility; the fertilizing stream, which ought to enrich the land, is diverted to another channel; the property is exactly in the situation of a farm which is every season ploughed and sown, but from which the crop is annually sold off. Every thing is taken from it, which it is able to produce; but nothing returned to render it capable of producing more.

8. The *stubbornness* of the common people, in adhering obstinately to old and slovenly habits, is no inconsiderable obstacle. As men rise in years, the reluctance to make any uncommon exertions, and particularly to introduce a change into any thing, which relates to their personal accommodation, gradually grows

grows upon them. Having been long accustomed to a certain course of employment, of gratification, of lodging, of dress and of food, they resist strenuously the relinquishment of any of these habits; they move on in the current of human life mechanically, like a wheel, without any apparent alteration in their motion, unless it be accomplished by some external force: and if left to themselves, they never change their course. This propensity to remain the same men, and to retain the same customs, is more unconquerable among the illiterate and ignorant, than among the learned or enlightened part of mankind. By means of society, of conversation, and of reading, the latter acquire an enlargement of mind, to which the former are strangers; and if they be accustomed to reflect on what they hear and see, they are always more open to conviction. When that mulishness of the vulgar, which is the child of ignorance, takes fast hold of the mind, it becomes so obstinate, that it can seldom or never be removed. Its universality would lead to the opinion, that it is an original principle in the human frame; but its progressive influence, which increaseth with age, and the apology which the vulgar urge in their own defence, that their fathers did such things before them, would imply that it is the effect of imitation.

We cannot, however, hesitate for a moment in pronouncing, that the general prosperity of the world is more promoted by the steadiness of the vulgar, even when it amounts to obstinacy, than it would be by fickleness, and a desire of change. The very existence of order, the continuance of established government, the enjoyment of the comforts of society, the sweet endearments of friendship, the exercise of the religious principle, and many of the highest blessings

of life, flow from the reluctance against innovation, which, with such inveteracy, resists new modes of cultivation in the management of soil.

9. Another obstacle, congenial in its principles, and similar in its effects to the last, is *overstocking* the pasture in summer, which compels the poorer tenantry to plough more of their land, for the sake of winter provender, than they can expect any adequate returns from, in grain. Their returns are scanty, yet their labour is great; and the seed expended is, what might produce fourfold the quantity which is reaped, both as to crop and straw. Experience teaches them, that an impoverished soil will produce nothing but weeds, unless it be sown thick; and having fallen into one error, in keeping too many cattle, they must commit a second, to keep them from perishing; and to crown their misfortune, their half-starved cattle degenerate, and their corn is little better than chaff,

10. *Digging* pits into the ground, where the soil is poor, in quest of earth to mix with dung, for the purpose of making composts, is another cause, which retards the improvement of the country. This cold sterile mixture enlarges the quantity indeed, but debases the quality of the dung, by its deleterious qualities, and throws up a variety of weeds, to which the land was probably a stranger, and which it will require years to extirpate. Composts are beneficial; yet to make them so, the soil added should be rich; the dunghill should be carefully turned, that the different ingredients may incorporate and ferment. Ferns, and other vegetable substances, as directed above, ought to be added in the composition. The only way, in which

which it seems probable, that barren earth can be, in any degree, introduced upon other soil, and rendered useful, is by spreading it on the surface, to inhale for some years the influence of the atmosphere, before it be turned down.

Under this article may be comprehended the annual casting of turf for fuel, and feal for building, and divots for covering houses, which peels the surface from a larger extent of ground than any person would conjecture, but one who has seen the baneful and unseemly effects of this practice. The turf is generally taken from a mossy stratum, where there is indeed less grass, because this soil burns more readily than any other; but the feal and divots are invariably cast from pasture ground, by which several acres, in many farms, are rendered unfit, during a length of time, for carrying grass or corn*.

11. *Rack-rents* are a radical objection to the improvement of any estate. A moderate augmentation of rent, and that being made at proper intervals, is equally favourable to the tenants and to the proprietor; but where the increase is excessive and sudden, both parties must eventually suffer. The means of improving his possession are withdrawn from the far-

* On this subject, perhaps it might be in place to remark, that it would be wise to impose a lighter duty upon slates or tile, *bona fide* used for farm steadings, than for other buildings. This would save a great quantity of fodder for the food, and litter of cattle, and tend to ornament the country; but if thatch must continue to be used more generally than it would otherwise be, owing to the heavy duties alluded to, proprietors would do well to introduce the practice of sewing on the thatch, which would render divots unnecessary.—*Sir John M. Murray, Bart.*

mer; and let him be ever so willing to do justice to his land, and ever so skilful in the most approved methods of cultivation, he is crippled in the very outset, and disabled, by the avidity of his landlord, to follow the dictates of his own good intentions or understanding. The indefinite progression in the value of landed property, by means of progressive improvement, is completely stopped, until the period arrive, when the estate will devolve upon another, and fall under more favourable management.

12. *Entails*, in most cases, prevent the improvement of landed property. When the possessor of an estate has a family, the neglect of the melioration of the property is not so frequent; but when the apparent heir is a distant branch of entail, according to the destination; or when the person at the head of the estate, and his successor, are on bad terms, nothing can be expected to be done towards increasing the value of the property. All the legal provisions enacted, for correcting the baneful influence of entails upon the improvement of the country, have been found unavailing: and must continue so, upon a principle, which is universal in all parts of the world, and among all classes of men.

Who can be found to exert himself, in good earnest, to promote the benefit of another, in whom he has no interest, or whom he hates, especially when the prosperity of that other person, must in the mean time trench upon his own emolument?

13. Lest it should be thought an omission, not having taken notice of commons, in the number of obstacles to the improvement of the county of Inverness,

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the only two parcels of ground, pointed out as being in that situation, shall be mentioned. A small common upon Aultarnistil; is the joint property of Mr. Davidson of Cantray, and of M'Intosh; another tract of undivided land, consisting of about 2000 acres, is situated between Drumharnie and Home, in Kirkhill. But the proprietors are very desirous to have the share belonging to each ascertained, by a division.

CHAP. XVII.

MEANS OF IMPROVEMENT.

THE great mean of improving this, or any other country, is the removal in whole, or in part, of the obstacles which retard that valuable end. No opportunity has been neglected, while treating of the various subjects that occurred, of pointing out, with all the fidelity and judgment in my power, the mistakes, which have been fallen into, in the management of stock, and in the cultivation of land; and of shewing at the same time, how these mistakes may be rectified, in a manner equally conducive to the advantage of poor and rich. Remove the obstructions which at present counteract the improvement of the county, and its amelioration will rapidly advance. Some of these obstructions arise from natural causes, which are not easily removed; some are chargeable on the ignorance and obstinacy of the people; and not a few may be laid, with justice, to the account of the proprietors of various estates. In the execution of this duty, I am in hazard of incurring a share of blame. My expressions may appear too ardent, my descriptions of faults too glowing, my reproofs too pointed, and my eagerness to fulfil the purpose of my mission to that part of the kingdom, may have moved me, without the most remote intention of giving offence to any mortal,

mortal, to treat too freely, of some practices, which are injurious, not only to the present prosperity of the county of Inverness, but eventually to that of the British empire itself, at some future period. Facts were so notorious, and their consequences of such magnitude, and so evidently fraught with national evil, that to have glossed them over, and to have concealed their tendency, would have implied a want of discernment, and a neglect of duty. After all, every degree of personality has been studiously avoided, although it was very much in my power to have been more particular.

1. The first, and the most important object to be accomplished, in order to improve any country upon earth, is to *preserve the people*. Without power, nothing can be done; and without hands, there can be no power: things must remain for ever as they are, or rather, must daily be falling back into a worse condition. Were the climate inviting, and the surface of the ground easily reclaimed from its barrenness, men could be persuaded to remove from other countries, to settle in a deserted district; but who can be induced, by any reasonable encouragement, to leave the southern, more comfortable, and more productive, parts of the kingdom; and sit down patiently to improve the Highlands of Scotland? *Preserve the present inhabitants of the Highlands; for if these are expelled, you will never procure another race of men to repopulate the country.* Hitherto you have been deceived by shepherds and graziers, coming from the South to solicit the possession of your best farms; but have you ever got from the South, labourers, diggers of the ground, men contented to drudge in the menial offices

offices of life, inured to the hardships of your boisterous climate, and able to undergo the fatigue of mounting your rocks and climbing your mountains, under so many privations as the native inhabitants? Have you got persons who understand the cultivation of your soil, and are willing to endeavour to render it capable of maintaining more people? The persons you procured, or who offered themselves, were of an opposite character. They have laid waste thousands of acres of the land, where corn was wont to grow; but raised not a single ear of corn from land which they found waste. This delusion will vanish. I wish it would vanish ere it be too late. May we hope, that gentlemen will open their eyes to guard against the evil, while the remedy is in their power. One will say, what is the remedy? How are we to obtain rent enough for our lands; and to preserve the people to improve the soil? Could my answer to these questions be satisfactory to the gentlemen of property, all the toils encountered, in exploring this rugged and extensive county, all my industry in collecting information, and all my labour in compiling this Report, would not be regretted.

A great proportion of the land, in the county of Inverness, is naturally qualified for pasture alone: in these situations, it would be preposterous to propose the growing of corn. This was never my intention. Yet there are many convenient spots, where villages might thrive, and other tracts of ground, which are very improvable, were they set off in lots to industrious people; and there is little doubt, that the present race of people would be willing to improve these upon reasonable terms, rather than leave their country for ever.

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It is not wantonness, but necessity, that produces emigration*.

The foot of glens, where the smaller brooks flow into larger streams or lakes, are, for the most part, inviting situations for villages. Even along the straths, or larger tracts of habitable country, villages may be successfully established. The creeks along the sea-coast, and the heads of those arms of the sea, that penetrate far amongst the mountains, are calculated, for the most part, very properly for this purpose. The whole tract of the Caledonian Canal may form a chain

* A judicious and learned neighbour of mine, the Rev. Patrick Murray, Minister of Kilmadock, in reading over the Manuscript before it was put to the press, made the following, among other remarks:

“ Allow me to suggest here another mode of improvement. The culture of the mind is absolutely necessary, as a preparative to the cultivation of the soil. Wherever a village of any considerable extent is established, or in the centre of two or more villages, let there be a house and garden provided for a Protestant Schoolmaster. Let him be the Laird's, and not belonging to the people; let him have as much salary as will be equal to his board, say ten bolls of meal, from the Laird's girdel; let him be examined by Protestant Clergy, and have rules for the regulation of his conduct. If his duty is faithfully performed, there will arise under his tuition, a race of men and women, whose manners will be civilized, whose morals will be correct, and whose industry will amply repay the Laird for his meal and cottery, and the scholars for the expense of their education.

“ I know from experience, that both proprietors and tenants will take more interest in a seminary of this description, than in a school established under the patronage and controul of any society.

“ As the number of villages and inhabitants increase, let there be provided a clergyman to instruct them upon the Lord's Day: let the week begin with rational religion, and the succeeding days will be devoted to rational industry. Expand the mind, and the hands will be made strong. A proprietor will endow a school and a church, at a less annual expense than he will give a ball in Edinburgh, or a rout in London. And a Schoolmaster will cost less than a footman; and a Minister less than a butler. *Whose labour will be the most productive?*”

of

of villages, at a proper distance from each other. In some of these places, the villages may be larger, in others of a smaller size, suited to the conveniences which can be afforded them, and the means of employing the people.

The conveniences, as was hinted above, which every family would require, are, an acre and a half, or two acres of land, which has been formerly in tillage, with grass for a cow; upon this stimulating condition or promise, that so soon as the cow's pasture was brought into any tolerable cultivation, an additional lot of pasture would be given, equal to the grazing of two cows. Timber, and stones, and moss, ought to be at hand; as for water, it is found any where in that country. If the people are set down on a feu-right, one-fourth of an acre may suffice for the site of a house and garden; but if their tenure be a lease, it ought to be a life, and some years more, in order to encourage the settlers to build houses of some value or figure. In the first case, the houses may be close together, with a lane backward, between every three or four feus, leading to a place for holding their peat-stacks and dunghills. In case their tenure be a lease, the houses may be more distant; and the proprietor may fill up these intervals at some future period, as he sees meet. Every tenth settler ought to have keeping for a horse, if the place be distant from a farm, to assist them with their fuel and tillage. But the detail of this plan must depend on the judgment of the proprietor. These are only outlines.

The means of employing, or, in other words, of subsisting the people, are various. Those situated on the shore will find all their time occupied in fishing, on which it appears necessary to dwell at some length; the

making of kelp, and occasionally improving their ground. Those in the inland parts, besides the cultivation of their land, have every opportunity of prosecuting the different branches of the woollen manufacture*; of being tailors, weavers, shoemakers, carpenters, and labourers to the whole district around them.

What may appear to be a radical objection to the proposed fishing villages, is, the inability of the description of persons supposed to be settled there, to purchase all the apparatus requisite for their various purposes. Without aid to the settlers, this obstacle might retard their success; and therefore, without the prospect of this aid, my hopes and recommendations would have been less sanguine, in what hath been said on this subject, in the preceding pages. But from the knowledge I have of several gentlemen in the Highlands, and in the vicinity of the West Coast of this county, who no doubt are only examples of many more, there remains not a suspicion with me, but they will pay attention to this business, so big with importance to themselves and to their country; nor is there the least fear, that their helping hand will fail of success.

Suppose that the operative fishermen are poor; suppose that very few of the inhabitants, in the fishing villages, are able singly to purchase a boat and a net, to set him fairly afloat in the outset; and far less to purchase casks and salt, when the fish is caught. Perhaps

* It is not my intention to recommend the introduction, into the Highlands, of such large establishments of spinning cotton, as are in the vicinity of great towns in the South, which are so injurious to the health and morals of the people, by collecting multitudes into one house; but only such as would afford employment and bread to the people on a small scale, and such as are necessary for the consumption of the country.

two or three of them may be equal to this expense: if not, it would be proper for three or four, or as many as could work a boat and net, to join stocks, and by fishing in company, to be mutually helpful to each other.

Where a proprietor is found, so attentive to his own interest, and so generously disposed, as to encourage a fishing village upon his estate, there is little doubt, but the same disposition will move him to wish to see the people comfortable and successful. Under such a landlord, there is not the least dread of their failure. He will either class the people in such distinct and separate companies, as will afford both the means and the hands, within each company, for carrying on all their operations; or if any association be weak in stock, he will lend them money upon their joint security, to give them spirit, and take part of the fish in payment of interest, and gradually in lessening the original debt, until the whole be cancelled. He will do more; for a benevolent man will not do his good offices by halves to his poor dependants. By means of his correspondence beyond the place of his residence, he is enabled to send for casks and for salt, so as to have these in readiness whenever required, that the fish may be preserved in good order, and in all respects fit for the market. If the small companies are in circumstances to pay for the casks, and salt, necessary for preserving their own fish, these articles are furnished by the superior of their village, upon prime cost. The very money which he paid as their original price, and the expense of their carriage to the village, is what he draws from his villagers: all his profit is, the pure pleasure of seeing his villagers happy, and the settlement prosperous. If, on the other hand, the fishermen should not
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be able, at the close of every season, during their first years, to refund their superior in cash, for his annual advances, in providing casks and salt; they pay him with part of their fish, which he employs an agent to render fit for the market, on his own account; and sends them away with the whole fishing of the settlement, in one common cargo.

The great object is, to give full scope to the industry of the fishermen, and to put matters in such a train, that no part of their time be unemployed, and no part of their labour lost: and this is done, by having every requisite at hand, by making all these things their own property, and the whole loss or gain ultimately to be their own.

My idea is not, that a landed gentleman shall embark with these villagers as a partner or principal. This might breed jealousy and distrust, and probably embezzlement. The whole trade ought to be among equals in rank, and at an equal risk, and all the partners operative people. All the concern that the superior ought to take, is to lend money, on a rational prospect of being indemnified, in cases where the people cannot go on without his aid, and to order the casks and salt for them, until they can do these offices for themselves.

The inconvenience of sending to a distance, for casks and salt, might be much lessened, if coopers were to settle at Oban, at Tobermory, at Ballachulish, at Fort William, at Arasaig, and other places, where hoops could be had, and the casks at all times found near the demand. But there is not the least doubt that coopers, like all other tradesmen, will resort where they can be employed most for their own advantage.

The various steps in the salting and packing, in the

same manner as the secrets of every other art, must certainly be learned, before it can be put in practice. All I can say, as to this point, is, that one man from a village, ought to be sent where he can become master of this art, and every other nicety in the business, which, on his return, would soon be communicated to the whole.

Let not the landed gentlemen deem as an ignoble employment, and therefore degrading them below their rank, what remains with them of this business. All that is necessary, on their part, is included in the duty of nursing their infant settlements (as many gentlemen in other counties do), until they can move steadily by their own strength; while the advantage to their own property, and to the national prosperity, is great, progressive, and permanent. Where does every commodity for food and clothing yield the best possible price? On those estates where collective bodies of men are settled together. Where can soldiers or sailors be found, when the numbers of the peasantry are diminished? In healthy and well constituted villages, great or small.

A proprietor, who is sanguine for the prosperity of the fishings upon his estate, will settle the necessary artificers, such as smiths, carpenters, coopers, &c. in the villages; and will engage a few experienced fishermen from Holland, or the East Coast of Scotland, to teach the natives; and give them some remuneration, besides being partners in the adventures.

The government of this country is so much awake to every circumstance tending to promote the national prosperity, that, whenever the natives appear to be in earnest about the fisheries, there is not any doubt, but

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one of the greatest obstructions to the fisheries will be removed, by an alteration in the salt duties, and the appointment of deputations from the custom-houses.

The proper employments of the women and children, as already taken notice of, ought to be the caring for the little crops belonging to each family, the tendance of their cows, and preparing the fuel for being brought home, unless they are supplied with coals by water-carriage, besides assisting the men to dispose properly of the fish, when they arrive with a cargo. The women should learn to spin hemp, to twist lines, to bait fishing-hooks, and to knit nets.

Fishing villages may be set down, not only in the stations alluded to, along the West Coast, but in almost all the larger islands of this county, and others, where the myriads of fishes of various kinds, which frequent these shores, would afford nourishment to such numbers of people, that no person would be under the necessity to leave the Highlands from the want of food. The extreme population of all countries, which derive their principal support from fish, from the well-regulated Chinese, to the savages of the South Sea, shews that the Highlands of Scotland may not only support the present population, but a great deal more, without any necessity of leaving the country, if we are wise enough to avail ourselves of the means which the bounty of Providence has put in our power.

The fish would also afford oil, which is an essential ingredient in the woollen business: and the manufacture of wool, in its various branches, will one day become a source of wealth and prosperity to the Highlands of Scotland. The accumulation of riches, the indefatigable industry, and the numbers of people, who crowd the streets of the manufacturing towns and

villages of Yorkshire, and other pasturing counties of South Britain, are owing chiefly to their woollen manufacture; which has now become famous over all the world. And what natural impediment affects the people of Inverness, to prevent their following the example? I know of none. They have the raw material at every door, and copious streams of water in every farm; and if their wool be inferior in quality to the English, it is well known that coarse fabrics will sell more readily than fine, because they are more generally used; and there is less chance of failure in the outset, by beginning with what is less fine. The population which may be employed, and the property which may be acquired, by this single branch of manufacture, are so far beyond computation, that an estimate sufficiently high, can hardly be guessed at: we might come near the mark, were we to know, what the towns of Yorkshire were, previous to the introduction of the woollen manufacture, compared to what they are at this day—probably not unlike what Inverness-shire is at present; except being a little nearer the sun. And may not Inverness-shire become hereafter like the county of York? Yes, surely, if persons of spirit come forward to employ the inhabitants, and shew the people how to avail themselves of their situation. Some of the preliminary operations in wool are well understood already by the Highlanders; the nicer and more complicated, they have quickness sufficient soon to learn. And what astonishing numbers would find employment and bread, in all the stages of the manufacture! Shearing, sorting, drawing, carding, spinning, weaving, dyeing, fulling, dressing, pressing, &c.

Even the spinning of wool, especially by machinery, implies such a progress, as augurs much good. This
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proves, that some of the inhabitants are fully determined to reap the benefit of their local circumstances, and to shew their countrymen an example of what may and ought to be done. A company in Badenoch, has lately begun to spin wool by machinery. I wish them success with all my heart. Soon may others lay claim to our good wishes, by following their laudable example.

The poor people, who are deprived of their farms, will then find a place in their own country, to which they may retire; and the superiors of these villages need not surely be told, that in no situation whatever, will land ultimately return so high a rent, as in the occupation of industrious villagers. Their land is only an accommodation: they provide the rent from other sources of industry. The village of Grantown, which was only established between 30 and 40 years ago, shews what may be done in this way. At present, it contains more than 200 families, tradesmen of various kinds; shops well furnished; schools; a post-office, and bleach-field, &c. Campbeltown, near Fort George, though of late standing, and under some disadvantages, is populous, and fast increasing. Kingussie, which is but of yesterday, promises to be a thriving village. The villages contiguous to Fort William and Fort Augustus, may be considered as attached to these garrisons, and therefore not examples in point. But the other villages shew what means the proprietors have in their power, of doing good to themselves and their country.

The poorest person, who is able to work for his bread, may find an asylum in these villages. Unless he can purchase a cow, he will find milk for sale; and unless he has learned a trade, he may be employed as a labourer.

In such a diversity of opinions, as the landlords and inhabitants must possess, the scheme of villages may not suit the inclinations of all. Some on both sides may prefer settlements, under the denomination of small tenants, with moderate rents : this mode requires more substance than the former, but does not accommodate so many families on the same extent of ground. A farm may be divided into lots, comprehending eight or ten, or more divisions, according to its size. The land best adapted to this purpose, is that which has some extent of arable or meadow ground ; the pasture next to the houses, of a gradual declination, and capable of being reclaimed, and the moor compact and contiguous. The arable ground and low pasture of every lot ought to be marked off, separate from every other, as mentioned in the Chapter on Waste Land ; and either enclosed by the proprietor, or the tenant taken bound to enclose. The land under cultivation ought to be so much, as to encourage an industrious man to sit down upon it ; but not so much, as to prevent his exerting himself to cultivate more from his pasture. Let us suppose, that he has four acres of meadow and arable ground reclaimed to his hand, and eight acres of coarse or pasture land. This, by common attention, will maintain three ordinary cows and a horse, in the very outset. Every year he may reduce half an acre, or more, of his pasture, into tillage, even by potatoes ; if the plough can be used he may reduce more. The second, or at most, the third year, he may have four cows ; and if he sows turnips, he may have more ; thus, at every interval, adding to his stock of cattle, as he proceeds in enlarging his arable ground : so that he is a rich man before the end of his lease. In the mean time, the whole moor being undivided,

vided, is depastured by a common flock of sheep, which had been bought jointly and equally by all the tenants; and the whole produce of wool, &c. annually divided, no man knowing his own share of any thing, until the division shall take place, and lots be cast. It is not meant, that this is the precise quantity of ground which every lot ought to consist of: if the people be poor, they may be less; if rich, they may be more.

A generous landlord, who adopts this plan, of which there are some instances already in the county of Inverness, and many in Perthshire, will rouse the enterprise of his tenants by every kind of encouragement. He will probably, at the interval of every two or three years, give to the men who have cultivated the greatest extent of waste land in a certain district, a new plough, a harrow, or spade, or mattock, an axe, or scythe, or some pounds of clover-seed, suited to the station each of them holds in the rank of improvers. All his expense is repaid a hundred-fold, by the melioration of his own estate.

No other adverse circumstance can prevent the adoption of this measure, but the want of willingness in the landed gentlemen, to promote the good of their country, while at the same time they would promote their own; which supposition I am unwilling to allow. The people would grasp at it with eagerness; for persons of their rank seldom emigrate, provided they can be tolerably accommodated and happy in their own country; and if they should emigrate, after the offer of fees or lots of land, as here proposed, at a moderate rent, and for a term of years, the landlord who makes that offer, will stand fully exculpated in his own conscience, and in the judgment of the public. The capability which
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the Highlands afford, of putting this measure in practice, is apparent. In most places there is plenty of moss, both for fuel and cultivation; and many fields, consisting of hundreds, nay thousands of acres, did I see, covered with heath, whose soil and climate is as good as the land already in tillage.

2. *Enclosing* the arable farms, and even those parts of store farms, which are under cultivation, is an improvement of such importance, that no land can be said to have arrived at any thing near its value, until this be accomplished. Neither growing corns nor hay can otherwise be preserved; nor is it practicable to sow turnips for winter or spring food, with the least prospect of success. Wherever agriculture is understood, and the modern improvements of green crops, and a proper rotation, are introduced, enclosing is a preliminary step found, in all instances, to be essentially requisite. Within the range of a sheep-walk, it will be vain to make enclosures of any kind; and even upon the arable parts of the same farm, every one may not be disposed to allow the propriety of fences; for this reason, that when the sheep descend in winter to the lower grounds, these fences are in danger of being destroyed. To prevent this untoward circumstance, the gates may be thrown open, and various other openings, of such a width as to let a sheep pass easily through, ought to have been made, at the bottom of the fence, in every distance of 50 or 40 yards, as mentioned above.

Very few, of what are called, in some places, Galloway dykes, and in others, rickle-dykes, have yet been erected in the Highlands. These are, however, by far cheaper, and more secure against the trespasses of sheep, than any other fence; and when skilfully built, they

they last as long as any double stone wall not built with lime. In them, the passages for sheep may be left with equal ease; which in both cases may be shut by a few bushes, or left open, as found necessary.

Even where hedge and ditch, with a paling, is preferred, it is very practicable to exclude sheep at one time, and to admit them at another, without hazard to the fence, by leaving small openings in the thorns and paling: but young thorns seldom thrive within the touch of sheep.

Neither the landlord nor tenants, can find their account in making enclosures, until every occupier of the soil be set down in his own division; but so soon as this preliminary step is taken, the very next point is, to enclose and subdivide the possession, whether it be great or small.

3. Before a man of common prudence, and of any regard to his own interest, shall lay out his money in improving the surface of his farm, he must have such hold of the soil, as gives him a reasonable prospect of indemnifying himself for those advances. It follows, therefore, that an estate can never be improved without *leases*. The proprietor who sets his face against entering into proper contracts with the persons who live upon his property, puts a complete negative upon all progress in its cultivation. The soil of his possession is the raw material, put into the hand of a farmer; and every idea of justice and fair dealing requires, that he shall enjoy the benefit of his expense, and labour, and industry, employed upon this material, to increase its value. It is in vain, that every farmer gets his land set off, separate from that of every other man; it is in vain that enclosing takes place, unless a covenant is entered into,

into, by which the possession is ensured to him for a certain term of years.

The more labour that must be bestowed upon a farm, to render it productive, the lease ought to be the longer; the less the expense which is required, as upon grazing farms, unless meadow ground is to be cleared of brush-wood, the shorter may be the duration of the lease. But as few farms are so highly improved, that no increase can be made to their value; and no farm is so deplorably barren, as to be incapable of any amendment, all farms whatever ought to be held by a specific contract, during a term of years.

In the management of estates, upon which the success of the arable system, the prosperity, and the encouragement of the tenantry are consulted, a circumstance is attended to, on the near approach of the expiration of leases, which in other cases is entirely overlooked, as trivial. A few years before the end of the lease, the tenant, for the most part, becomes anxious about the renewal of his contract with the landlord; and unless this anxiety be gratified by the landlord, a suspension of industry takes place on the part of the tenant; which is a material injury to the farm. The provisions in leases generally guard, with studied accuracy, against the deterioration of farms during the last years of their duration; but notwithstanding all this supposed accuracy, the exertions of the possessor languish, and the improvement of the farm is neglected; so that the interest of both landlord and tenant suffers, when the contract about the renewal of a lease is procrastinated by the proprietor.

We may nevertheless conceive a tenantry so poor, so stupid, so indolent, and so ignorant of improvement, that a general grant of leases, upon a whole district, would

would do no good. The most favourable terms might not stimulate: and at the expiration of the tack, be its duration what it will, the state of the ground might be no better than at the commencement. A humane landlord, who perceives himself to be in this situation, is to be pitied. His compassion makes him reluctant to turn this naughty generation adrift; and yet he repines to see his property abused. The landlord ought to assume a firm tone, and tell such a district, that he intends, in a very few years, to weed every sloven from his estate; and that the only hope of continuing to enjoy his countenance, or to possess his ground, is by the introduction of some improvements upon a small scale, which may be pointed out with precision, and suited to the proprietor's ideas upon that subject. The very first man, who would shew himself capable and willing of fulfilling the intention of the proprietor, in this respect, ought to get his lease. This would be a proof to the rest, that he was in earnest, on his part; and would excite a rivalry among them. In a short time, it is probable, that every man would become an improver, and deserve his lease.

4. It is, in all cases, more difficult to excite a tenantry to begin to improve, than to persuade them to go on progressively, after they have fairly begun. A gentleman of discernment, who looks round his property, will soon distinguish who are the most enterprising and the most successful among his farmers; who are the most liberal-minded, and least fettered with prejudices in favour of old or slovenly modes of farming. *These* ought to be encouraged, by obtaining longer leases, and other marks of distinction; which would excite a general emulation among the whole, provided

provided no partiality appeared, and that the distinctions were always the reward of merit. Such are the men to be employed, in adopting any thing which is new or uncommon in a country, either in the cultivation of the soil, in the kind of seed to be sown, or in the species or tendance of stock.

What the Laird does, as a farmer, is supposed to be beyond the reach of his tenants; but when they see that one of their own class succeeds, in trying new experiments; that he is not only successful, but rewarded, and treated with distinction, and held up as an example; this is language which they understand; an incentive, which they cannot resist. The spirit of improvement becomes diffusive; no good man being willing to be left behind his own equal, in the road of preferment, in the prospect of accumulation, or in the esteem of his landlord.

5. The cultivation of *green crops* has not only a tendency to improve the style of farming, in any country, but is an evidence, wherever it appears, that agriculture hath made considerable advances. In writing this Report, various opportunities have occurred, of strenuously recommending the culture of potatoes and turnips; and they cannot be recommended too much to any place, particularly to the county of Inverness, where so much remains to be done. Waste land can, by no other process, be so easily, or so completely reduced, by the ordinary ranks of tenantry, as by planting potatoes in lazy-beds; and land, which has been exhausted and rendered foul by a repetition of scourging crops, cannot be cleaned, or dressed more effectually in any other manner, than by sowing turnips in drills, previous to its being laid down to grass.

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Gentlemen of fortune, as was said formerly, who have men and horses at command, may tear up waste land, in the first instance, with the plough; or they may trench it, provided their object be to complete the reclaim by one operation; but the generality of mankind are alarmed at the arduousness of these undertakings. These may employ a clean fallow to refresh and invigorate exhausted land; but the poor, who are unwilling to lose a crop, may accomplish the same end, in a certain degree, by raising turnips, and by hoeing them carefully with the plough. In those parts of the county, which border upon the firths, other kinds of green crops are also proper; but in the more inland districts, where the climate is rainy, and the soil thin, no other, than these mentioned, will succeed with equal certainty.

Of the value of potatoes they are fully aware, as an article of human food, but not so much as a mean of reducing waste land to tillage, of cleaning land that is foul, or for the purpose of feeding horses, cows, poultry, hogs, and every animal whatever. Of the vast importance of turnips, as a winter food for cattle, and a seasonable addition to their provender, they do not seem to be in the least degree sensible. To tell a poor man with a numerous family, that he may have milk all winter for his children, to be dressed with their potatoes; that he may double his winter provision for his cattle, and double the dung for his land; that he may have his horses in as good condition for labour, in another way, as if they were fed upon the oats, which he might save, to be grinded into meal for his family; and that his weakest field is strengthened and cleaned at the same time that it produces a crop; is news that must gladden his heart. All this, his landlord may not only
tell

the covert of a plantation. The estate of Lochiel has more plantations than any other in Lochaber.

There is little doubt, that these regions were formerly much warmer, and more comfortable for man and beast, than they are at this day, after so many generations have been waging war incessantly upon the growing timber; and there is as little doubt, that the country will become more inviting, the climate more warm, and the value of property much enhanced, by planting more of the barren ground.

7. The next mean of improvement, which my duty requires me to suggest, is to exercise, in many instances, more tenderness and circumspection in the removal of tenants. A landlord, who enters into the feelings of these poor people, endeavours to look round for a retreat, where they may be accommodated, either on his own property, or on that of some neighbour. When two or more farms are to be thrown into one, or when a whole glen, where several families live, is to be converted into a sheep-walk, how much caution and prudence is required, to avoid the just imputation of hard-heartedness and oppression, which in all cases, meet the execration of the world, sharpen the stings of an accusing conscience, and draw down the vengeance of Heaven. In many other parts of the kingdom, villages are planted, manufactures and public works are carried on, where the turned-off tenants can find an asylum, though an unfeeling landlord were to treat them with as little mercy as so many wild beasts; but in the county under review, there are few villages hitherto established; manufactures are in their infancy, and no public works whatever, before the great canal and the roads began to be carried on. In times past,

the numbers who were in this deplorable predicament in the Highlands, had no other alternative, but to have recourse to begging, or to emigrate to some distant country.

Under the full impression of this crying evil, I have repeatedly urged the necessity of erecting more villages, great or small, and of dividing some proper farms into small holdings; and if the proprietors see the magnitude of the calamity, which, without some remedy of this kind, ultimately threatens themselves and their country, an admonition, from whatever quarter it comes, which is dictated by the purest regard to them and their tenants, will not be spurned at as officious or disrespectful.

8 In many parts of the county, the boundaries of coterminous farms are extremely awkward. When the property of different heritors, or the possessions of different tenants, are divided by the winding course of a brook, or some other inconvenient natural limit, as all lands, lying in the same valley, must have been distinguished at first, it becomes almost impossible to improve the arable ground adjacent thereto, because it is both difficult and expensive to have it enclosed; and even though enclosures be made, they can neither be regular in their shape, nor accord suitably to each other in their dimensions. To rectify these irregularities, by straightening boundaries; to render lands more compact, and to remove such a frequent source of quarrelling and litigation, is a valuable mean of improvement, and highly desirable by every man, who is at once industrious, peaceable, and honest.

9. The gentlemen of property will find it their own
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and their tenants' advantage, to introduce a better breed of horses on their estates; and for this purpose, stallions of a proper size and figure ought to be provided from other countries, and lett out at an easy rate, or allowed to cover gratis, in different stations. In order to render this regulation effectual, and to meliorate the breed of horses, the tenantry ought to be prohibited from allowing their uncut colts to run about, as a nuisance, and an annoyance to the country, and disappointment to persons who have good mares, and would incline to introduce a good breed.

In many places, the horses are thrice the number necessary for the purposes of husbandry, which creates a great waste of provender at all seasons; and when yoked together, they draw so unequally, that, let their united strength be what it might, their joint force can seldom or never be brought to bear upon one point. Two good sized horses in a plough, have more power than half a score of these; and one in a cart, will carry more than all that can be yoked to it.

10. Symptoms of an increasing desire for improvement, are the establishment of Farming Societies. By communicating the result of their experience to one another, the members render their knowledge in agriculture more diffusive, and excite an eagerness to excel in their profession. The country around looks up to them as patterns; and the utility of any new mode of culture, or any new grain, or grass seed, or any change in the common species of cattle, or improvement in the implements of husbandry, is fairly tried, and if found preferable to the old, receives the sanction of the Society, which gives it a currency in the country.

One of these clubs has subsisted, for a considerable number of years, in the vicinity of Fort George, of which several gentlemen and farmers are members.

In the year 1803, the Badenoch and Strathispey Society was established, under the patronage of the Dutchess of Gordon. Many respectable characters are members of this society, and a large fund is subscribed, by persons resident both within and without the county, for the purpose of giving premiums for bulls, tups, ploughing, sowing grass-seeds, flax, spinning, knitting stockings, &c.

Gentlemen who understand the improvement of land, the cultivation of the most suitable crops, and the rearing of the best breeds of cattle, are not confined to those parts of the county where the societies have taken place; therefore, associations of a similar nature will no doubt be soon established, in various other districts of this extensive country.

11. The houses of the common tenantry ought to be improved. It has been already remarked, that they have too many houses; that their construction is faulty, and their appearance mean; that in most cases, their walls and covering is earth; and that their being renewed, at short intervals, destroys much grass, by carrying away the best of the soil from the surface of the ground.

This mean of improving the comfort of the inhabitants, and the aspect of the country, like many others, rests chiefly with the gentlemen of property. Why not employ professional men, skilful in building stone walls; and furnish proper timber from their own woods, in the construction of their farm-houses; and take the possessors bound, if they will, to furnish stones,
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and to thatch their houses with heath, or fern, or straw, like other civilized people? The saving of grass would, in a few years, be a compensation for all this expense; but whether it will compensate or not, there is so much slovenliness chargeable upon the people, and such a want of taste upon the landlords, where this meanness appears, that it must soon be removed; because they can no longer withstand the ridicule and reproach of the world.

In the course of my peregrinations, my ears were grated with the sneering remarks of other travellers, from the South, who had never seen any such thing before. Their description of these dwellings, used by human creatures; the manner, in which the whole smoke had no regular aperture, but issued from all the crevices of the house; the sarcasms thrown out against the Lairds, I found it impossible to palliate, although I now decline to repeat them, in the words then employed, or to point out the districts that were spoken of.

12. In collecting my observations on the means of improving this county, into one point of view, it is impossible to avoid, in a certain degree, the repetition of some remarks, which had formerly been thrown out, in treating of subjects, with which they are ultimately connected. This, I hope, will be forgiven.

The speediest way to improve the various branches of the agriculture of this, or any other country is, by sending several young men to other countries, whose practice in farming, the gentlemen are desirous to introduce at home. Let them be the sons of farmers upon the estate; lads of steadiness and observation,

and qualified to take notes of what they see, besides all the experience they may acquire by their personal labours. No other inducement is necessary to engage them, in this manner, to co-operate with the proprietor for the improvement of his estate, but a promise of obtaining a farm to themselves, when they return qualified for that employment, after having served a certain number of years, under a proper master.

This mode of introducing improvements, I conceive to be less expensive to the proprietors, more advantageous to the country, more effectual in itself, and at the same time more humane to the people, than what is sometimes proposed by men who speculate on this subject, viz. the bribing of farmers, with an offer of very favourable contracts, to come from other countries, and settle in the North of Scotland.

It is vain, to urge old men to adopt a style of cultivation to which they had never been accustomed, and which they had not even perhaps seen tried. This is probably beyond their power; and what is worse, they have no inclination, but rather an aversion, to attempt practices, which they consider as useless novelties. But a number of young men, under such encouragement, and after such initiation as has been mentioned, will disseminate a spirit of improvement over a whole property, more rapidly and more easily, than can previously be fully conceived. Another, and a very great advantage, attends this method of introducing improvements: the old race of inhabitants is preserved; which, to a gentleman of compassion, is an object hardly less dear, than increasing the value of his land, by teaching his tenants to be good farmers.

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13. Complaints have been made, and with very appearance of justice, against the able-bodied young men, for running away to hire their labour in other countries, and refusing reasonable wages in their own. They afterwards come home in the decline of life, and being perhaps in poverty, are a burden upon their neighbours. No legal restriction can be applied in this case; but a voluntary restriction may be devised, which is more powerful and less exceptionable.

Were a fund established in the county, or in the districts of it, where this inconvenience is most prevalent, by subscription, or by a small assessment levied from the heritors, and clergy, and farmers, for the support of infirm and superannuated servants, who have continued regularly at service, within the limits to which the benefit of the fund extends, young men might be induced by such a boon to remain in the country. They might be solicited to contribute a mite annually, from their own earnings; and a preference, in the time of need, might be held out as an encouragement to those who remained longest in the same service, and could produce satisfactory testimonials of their honesty, sobriety, diligence, and respectful behaviour to their superiors. This is near akin to the benevolent associations formerly recommended; only, its advantages are less general, being wholly confined to one class of the community.

14. Although the lauded gentlemen are, in many respects, the main spring, in the progressive civilization and improvements of any country; although much of this business depends on the good sense of the tenantry, and the ease with which they are stimulated; yet the

expertness and intelligence of the ploughmen have not a small degree of influence. Every plough is either in the hands of the common tenants, or in the hands of servants, employed by persons, who are above following the plough themselves. It is well known, that these tenants are never in the foremost rank of improvers : all that can be expected is, that they be prevailed upon to follow, at some distance. The operative people, in the work of improvement, are therefore hired ploughmen. Of how much consequence is it in this case, that these be honest, docile, tractable, skilful, able and willing to second their master's notions, in the introduction and execution of improvements. If the master is under the necessity of changing his ploughman every year, or half year, his plans may be counteracted, and his experiments not fairly tried ; at all events, his progress must be slow, and his hopes of success frequently disappointed : but if he be so fortunate, as to have a ploughman for a number of years, who enters fully into his views, with dexterity in the accomplishment of his plans, and attachment to his interest, things go on smoothly and successfully. The question is, how is he to obtain this good fortune ? It is in his own power to command it. Whenever he meets a servant to his wishes, let him encourage that servant to marry, and give him a decent settlement, in a convenient corner of the farm. This is a treasure, on which he can hardly put too high a value. Let it be made his interest to be faithful, and to fulfil his master's intentions, so that, whether he be himself at home or abroad, whether he be in the house or in the field, whether he be asleep or awake, he may find every thing done to his mind. Married servants are less addicted to roving, than single men : they are susceptible, from habit,

habit, of stronger attachments, and more averse to change; because they would have their families to carry about. If they have good sense, they are more earnest to fulfil their master's wishes, and to study his emolument; which, in other words, is ultimately, to promote their own, and that of their family; provided their master has discernment to see their value. Were it therefore customary, in the shire of Inverness, to make establishments for married servants, we should hear fewer complaints of fickleness, and desertion of their country, brought against servants of any description. What is here recommended is very much practised, in the best improved counties of Scotland, and it would have the same salutary effects in this county, which attends it in others.

15. Good roads, by means of which a country is rendered accessible, is the foundation, or forerunner, of all improvement. Without this convenience, the inhabitants can neither procure, from other quarters, the commodities they stand in need of, nor can they dispose of the surplus of their own. Had it not been, that the chief saleable article in the Highlands, for time immemorial, was cattle, the melioration of the roads would have been thought of long ago. The country being so much indented with arms of the sea, and the extreme difficulty of opening inland communication, in such rugged ground, were other bars to the improvement of roads. Happily, however, this work is now begun in earnest; the great Canal, and the several lines of roads, which are either to be repaired or made anew, are of unspeakable advantage to the county, because they are the symptoms of many others.

CHAP. XVIII.

MISCELLANEOUS OBSERVATIONS.

1. THE insertion of a number of prestations and items into a lease, is very injudicious, because a proprietor may get the full value of his land by a money-rent alone; and a farmer of spirit, is more galled by these small sums, than their real value. Withdrawing the labour of the tenantry from their own farms, and applying it to the Laird's farm, in seed-time or harvest, has been already reprobated; but the payment of hens, chickens, butter, cheese, land-tax, thatching of mills, repair of mill-dams, baron-officer's dues, minister's stipend, schoolmaster's salary, and the other *et ceteras*, which find their way into some leases, are a source of constant irritation, and serve not one good purpose whatever. A thousand altercations arise, about the fulfilment of these contracts; and the farmer is no sooner out of one quarrel, than he is doomed to engage in some other. Unless he be a man of more than common understanding and discretion, he considers his money-rent to be all that he has value for, by possessing his farm, and reckons all these items as so many impositions, which he resolves to get over with as little loss to himself, and as great advantage to his landlord, as possible.

Nothing can be easier, than to ascertain the amount of all these trifles, in money, which may be added to
the

the rent; and the tenant may be taken bound in his lease, to pay the proprietor one general sum, in name of rent, and no other burden whatever.

2. The equalization of weights and measures would not be a local benefit to one county only, or to several, but a general advantage to the whole empire. The frauds which are committed, and the disputes which are engendered, in the daily transactions of life, by the difference of these in various counties, and often in different districts of the same county, it is difficult to describe, or conceive: where such opportunities occur of chicane, and all within the letter of the law, persons no doubt will, in every country, be found base enough to practise treachery, and artful enough, in such a case as this, to steer clear of a punishable crime. The absurdity of such a variety of standards, used by the subjects of the same Sovereign, is so glaring, that unless some distinguished member of the Legislative Assembly shall stand up in his place, to propose the adoption of one general standard, the counties must come forward, as they have often done in other cases, requesting attention to this business; and there is no doubt but they will be heard.

In writing the Report of the Agriculture of Perthshire, this matter was glanced at; and soon thereafter, this measure seemed to be in agitation; though it has again fallen asleep. There are certainly some weighty objections to a regulation, which, to a plain man, appears by no means insuperable. But why not cut the Gordian knot, unless it can be loosened? The nation has become too wise, to be led into every wild scheme of reform, which theoretical projectors may propose; but why reform nothing, through fear of reforming

forming too much? Why not lop off the excrescences, which obstruct the prosperity of the plant, from a fear of tearing it up by the roots?

If ever the grievance of the diversity of weights and measures is removed; all dry commodities whatever ought to be sold by weight alone, and none permitted to be sold by measures of capacity, except liquids. Weight is the true criterion of the intrinsic value of many articles, which are at present disposed of by measure.

An uniformity of weights and measures was established for all Scotland, by the Parliament of that kingdom, upon the 19th of July, 1587. The ellvand (yard in length) was by statute to contain 37 inches, and the standard committed to Edinburgh. The stane (stone weight) was to contain XVI li. Trois, ilk trois punde, containing XVI ounce. The pint of Strivling (Stirling) ij punde and IX ounce Trois wecht of clear water. And the firloft to containe nineteen pints and twa joucattes; and this to be the measure of all victual and stuffe. This standard firloft to remain with Linlithgow, and duplicates thereof, with all other Burghs: And the Provosts and Baillies, and others mentioned in the act, were commanded to see the same observed, under penalties formerly enacted, in the 6th parliament of James IV. in 1503, which ordained, “Gif (if) any persones use any other measures or wechts in time to cum, it shall be ane poynt of dittay, and they to be indicted therefor.”

3. The manner in which unmarried men-servants spend the winter evenings, is a loss to themselves, a loss to their masters, and to the community. If the loss of labour were the only inconvenience, the practice might

might be less regretted. But when they collect in bands, from neighbouring farms, all the well known misfortunes which accompany habits of gaming, drinking, and intrigue, that are then acquired, must be taken into the account. Tradesmen ply their business from six to six, and some artificers later; but these able-bodied men, in the prime of life, seldom or never get out of bed, in the short days, before eight in the morning, and give up their labour by three or four o'clock.

In the Southern districts of Scotland, the men of this description take the flail in their hand by three or four in the morning, and have their thrashing over and barn put in order, by the approach of day. These are entitled to go early to bed. But where the farmer's returns are more from grass than corn, he has not the same occasion for the morning-work of his men. These slovenly and pernicious habits are an additional argument for employing married servants, who always find something to do in their own families, after daylight is gone, unless their master has occasion to employ them.

The nocturnal strolling of unmarried men-servants, so much complained of in this county, might be in a great measure checked, if their master made it a stipulated part of their duty, to be at home every night, between the beginning of November and the end of February, by seven o'clock, to clean and feed their horses.

When industry becomes more general in the grazing countries; when the woollen manufacture is introduced upon a larger scale; when young boys and girls are taught in their youth to knit stockings, they may be inclined, even after they are grown up to manhood, to continue that employment at their bye hours, and
either

either provide themselves in that article of apparel; or earn money by knitting for others.

Were the gentlemen of the county to take this matter under their consideration, they might at least correct the evil, if not remove it altogether. Why should not the societies for improvement, give premiums as well to young men for knitting stockings, as to girls for spinning or knitting? If they turn this matter over in their minds, various restrictions on the one hand, and excitements on the other, will occur to themselves, without directions from any other person.

4. Since the introduction of sheep stocks in such numbers, into the Highlands of the county, the foxes, and eagles, and hawks, and ravens, and martins, and the whole host of beasts and birds of prey, have been kept in check. Still, however, they do great havock among the lambs, when they are dropt, and among feeble sheep in spring, or at all seasons, on those that are entangled in briars. To quicken the vigilance of the fox-hunters, besides the general assessment collected as wages, within their respective districts, they might be rewarded by a premium for each of that kind of vermin they could prove to have destroyed: the premium being greater or less, according to the danger apprehended from the different species of these ravenous animals. Tradition reports, that this ~~was~~ the manner in which wolves were finally extirpated in Scotland.

5. The time and manner, in which the fiars of this, and all the other counties in Scotland, are struck, is very susceptible of improvement. The beginning of February is too early, in the present state of the agriculture.

ture of the kingdom. Except after a bad season, or a year of scarcity, very little of the crop has been brought then to markets, and the little that is exposed to sale, is rather green. The price is fixed by a jury of corn-merchants, who may all have an interest preponderating one way, being traders in that article, of which they are to fix the price; which price is not to affect themselves, but other people. This absurdity does not happen in the sale of any other commodity. Were one third only of this jury to be traders in grain, another third actual farming gentlemen, and the other third principal farmers, every person having interest in the transaction would be fairly represented. The Sheriff being the most proper person to be chairman, ought, as at present, to preside, and have the casting voice.

It is a matter of great moment, to use every degree of circumspection in establishing the average prices of all the various kinds of grain and meal, because many contracts in grain refer to them, many decisions in Courts of Law recognize them, and in all doubtful cases whatever, they are held as sufficient documentary evidence of the prices, for as many years back as the records of the court exist, in which they are engrossed. Nor can there be a retrospective proof devised, of equal publicity and authority, relative to transactions in grain. They resemble the national register, where the most important charters and papers of the country are recorded; and therefore ought to be settled with every degree of care and solemnity.

I paid some attention to the corn laws, as regulating the importation and exportation of grain; but as this business is occasionally brought before the great Council of the Empire, where it will, no doubt, soon meet with a discussion from the collected wisdom of the whole

whole country, I pass it over with one remark—that it is in vain to urge farmers to improve their soil, and raise weighty crops of grain, unless they are suffered to derive benefit from the fruits of their own industry. No other class of the community are under such unfair restrictions.

6. In delineating the character of the inhabitants of Inverness-shire, it may be observed in general, that the characteristics of the different ranks, are nearly similar to those, in the same situation, in other countries. The people of education, whether proprietors or tacksmen, or persons in public offices, are polite, affable, acute, well-informed, and acquainted with the world. Their acuteness is natural; for it cannot be acquired. Their politeness is the effect of society, and of the company they have seen. Their affability is cherished, by freedom of conversation in what they think proper to communicate, and the unaffected ease they acquire by their intercourse with the metropolis. Their store of knowledge is collected by reading, digested with judgment, and augmented by the most pertinent remarks upon what they see and hear, of other places, and people, and things. I had opportunities of seeing only a few; yet these few were selected and accounted a proper specimen of the whole. Here it becomes me to express my gratitude, for the reception I met with, and for the readiness and accuracy of information with which my inquiries were honoured. The knowledge of agriculture displayed by individuals among them, exceeded my expectations. Clean fallows are not indeed frequent; but in the light soils of several districts, the culture of potatoes and turnips in drills, which are carefully horse-hoed; and in other soils, pease and
beans,

beans supplied the place of a fallow. These good examples will soon be followed by all, who hold their possessions under the security of leases, and have the ability to improve their farms. Yet it is to be regretted, that there are but few of the middle ranks of life: the whole inhabitants, besides the proprietors, being either affluent tacksmen, or poor people, who are denominated in the country, *small tenants*. There must, no doubt, be subordinate ranks in life, so long as men are different in their talents, in their industry, and in their ambition. But these men, like the colliers and miners of other countries, remain in the same state from generation to generation, in the county of Inverness.

7. The incalculable advantages of the Great Canal, to this and the neighbouring counties, will introduce unknown changes in the value of property, in the face of the country, in the manners and industry of the people. Its banks will be lined with villages, to which the people may retire, who lose their possessions, and every man will find employment, who is willing to earn his bread; wealth will flow from it in all directions, and every saleable commodity will find a market at the people's doors. A benevolent heart anticipates these advantages with joy, and dwells with complacency on the blessings waiting for a race unborn.

CONCLUSION.

AFTER having travelled so many miles, to explore that part of the Highlands which belongs to the county of Inverness, and after having bestowed some pains to illustrate the condition of the inhabitants, and the state of their country, I shall now conclude what seems to be the residue of my duty, by recalling the attention of the reader once more to the national importance of this division of the empire.

However rugged, and forbidding, and wild, the general aspect of the country may appear, to a person not conversant with the rude scenery of Nature, yet the produce derived therefrom, the beef and mutton, produced from these mountains and vallies, form the highest and most permanent delicacies on the tables of the wealthy, in all parts of Britain. The flavour of that meat reared in the Highlands, the richness and tenderness thereof, is so much esteemed, that it is sought after in every market, from the Butt of Lewis to the shambles of the metropolis. Whether it be the exercise required by these animals, in mounting the steep ascents, and alternately descending to the glades below, which mixes the nutritious juices so intimately and regularly, or whether all the preference given to this kind of meat by persons of taste, ought to be attributed to the species of cattle and sheep, I am not connoisseur enough to determine; being satisfied with the fact, I infer from thence, that the Highlands are worthy of notice on
account

account of this part of their produce. But the most valuable produce of that part of the empire, are the *Men*, which are there reared for the national defence. A Right Honourable Author*, in a late publication, endeavours to explain away the distinguished bravery, which has uniformly characterized this people, from the earliest times down to the battle of Aboukir. But facts are always too strong for hypothesis. To whatever we may ascribe the courage and success of the Highland regiments; whether it be *l'esprit de corps*, or national pride, is a matter of pure indifference. While we are certain that it has long existed, let us be satisfied that it still continues to exist, and let us therefore presume, notwithstanding any suppositions to the contrary, that it is reasonable to believe the same warlike spirit will remain to future ages.

Wherever mankind are placed in tribes, and persons of the same kindred are found in the same country, which at one time must have been the case in most, if not in all nations, we find many qualities, not to be met with in societies, which are more mixed, and compounded of a heterogeneous people; and one of those peculiar qualities, is such a defiance of danger as other men deem incredible: another quality is, an attachment cemented by consanguinity, riveted by similarity

* It was at first my intention to have written remarks on every chapter of the Earl of Selkirk's elegant book, *separately*; but finding that very able answers have been published, and that my going into this detail, would swell the present publication beyond the bounds of an Agricultural Report, I have only glanced at the general proposition, which constitutes the essence of his argument; because it militates against some observations taken notice of in the course of this Survey; because I humbly conceive it does also militate against the best interests of my country; and because his premises are, for the most part, erroneous, and therefore his conclusions must be unfounded.

of habits, and rendered indissoluble by the exchange of friendly offices from their earliest years.

Hence the bravery of the ancient Gauls, of the Arabs in all ages, of the native Americans, and of the Highland Clans of Scotland. The cause of this I stop not to investigate: we have a greater interest in the *effect*, of which there can be no doubt, and of which there must be a cause.

The Highlanders of Scotland, besides living together for the most part in tribes, enjoy other opportunities, which augment their fitness for a military life. They are invigorated, by being destined to climb the most rugged and steepest mountains, to perform hazardous and long journeys, to bear with many disappointments, as to food and other refreshments, and to pass whole nights in the open air, when arrested by impassable streams, or wandering in a thick fog, or under falling snow. The pride of Clanship, the origin of their name, and the honour of the Chief from whom they derive their blood, spurns at what may appear base or unworthy of their descent. Hence gratitude, ambition, and the love of fame.

Let it not therefore be forgotten, that these people have been in all ages *true men*; of strong passions, firm to the purpose they had in view, steady in their resolution, unshaken in the cause they had adopted, and resolute to accomplish their object. Their whole history, is an evidence, that this is a strong feature of their character. Let us not be led into a mistake by the flowing style, the rounded periods, or the strong assumptions of the Treatise published under the name of that Noble Author, to undervalue the Highlanders, or for a moment to allow ourselves to believe, that it will contribute to the national interest, that they were gone
for

for ever. No! Let us dissipate the mist, which that fascinating Writer gathers around our understanding: let us dispel the charm, and see our own interest and that of the Highlanders to be closely connected; and let us conclude, that Britannia ought to gather her Highlanders under her wings: that no reasoning, however specious, ought to make her forget what they have done, and what they are still willing and able to do, for her protection.

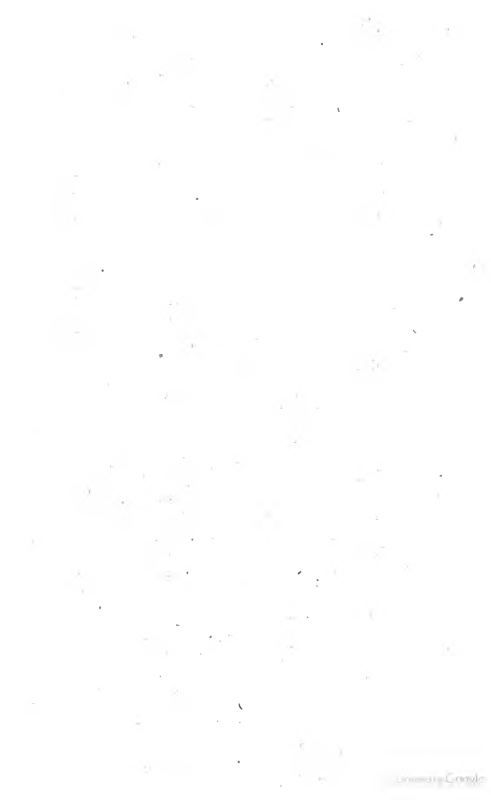
In these eventful times in which we live, in the present situation of the powers of Europe, are we to listen to a project of depopulation? are we to be hood-winked, or tamely to submit our judgment to the authority of a private opinion, however high, and however finely it is clothed in all the beauties of language? Will the British Nation, or the British Legislature, ever be made to believe, that the settling of a paltry island in the Gulf of St. Laurence, is to be preferred to the population of our native country? *Quem Deus nulli perdere, prius dementit.* Is this the use we ought to make of our brave mountaineers? Is such a spirit of delusion ever to fall upon us? No! May God forbid! Let us do all in our power, consistent with the privileges of these people, to keep them at home; that we may have them at hand, to rally round our constitution, to be the pillars of the throne, and a shield to our families and property; that we may, to latest ages, bid defiance to our enemies; and that, amidst all the convulsions of other nations, amidst all the revolutions of other states, and all the havock of domestic or foreign wars, Great Britain may still retain her liberty unimpaired, her honour unsullied, her privileges secure, and still be the admiration of the world; because she retains

her sons around her, as her firmest bulwark and her greatest pride.

We are gravely told, it is vain to expect that the Highlanders of Scotland can be accommodated or employed in their own country, and that the improvement of the Highlands requires their expulsion. Alas! this is a dreadful judgment; but dreadful as it is, the object of the whole Treatise is to persuade the public that this must be done.—The national councils, the guardians of our population, and of every thing we hold dear and salutary, have shewn that they do not believe the Right Honorable Earl's conclusion to be well founded. They have demonstrated to the world, that they believe the very reverse to be the truth. They have devised means of employment and of subsistence to the Highlanders, in carrying on the Great Canal. "Aye (says the Earl of Selkirk), but that will not do. It is only a temporary expedient. The Highlanders are so indolent, that they will not work at canals, or at fisheries, or at manufactures, or at reclaiming waste land; and the sooner they leave the country, so much the better." Is not all this plainly begging the question? Is it not mere assumption? The Noble Writer himself must be sensible, and all men must see, that it is nothing but hypothesis and a bold assertion, in place of proof. First, try the Highlanders in these different works, and then say what they are, and what they will do. Give them an opportunity of proving, whether they are indolent or active, before you condemn the whole race. This, at least, is no more than fair dealing. May we not trust the opinion of those men who are best acquainted with the Highlanders; of men in different districts, who have narrowly and constantly observed

observed their habits for more than half a century, rather than the judgment of the Noble Earl, who took a ride through the Highlands in 1792, during the course of his academical studies; or of his Glasgow manufacturer, who says that they did not relish his cotton spinning*? I have known them myself intimately for many years; and that, when my judgment was more mature than it could be supposed during the course of my academical studies; and I contend, that if a Highlander, at a proper time of life, has an opportunity to improve his situation, no man of any country is capable of more exertion, or of more ingenuity to accomplish his purpose. And therefore I conclude, that it is a wise policy in Great Britain, to cherish this race of men, to prevent their being decoyed away by any Utopian schemes of trans-Atlantic colonization; to use every persuasion with the proprietors in the Highlands (all of whom, very few excepted, are well disposed), to concur in their preservation, by affording them settlements in their native country, either by establishing villages, for the purposes mentioned in this Report, or in any other manner, which may appear better calculated for that end.

* A gentleman of long experience, and of the most accurate knowledge of the Highlanders, and of their country, answered my questions on this subject, in these words: "It is a common, but a gross mistake of persons unacquainted with this country, to brand the whole body of the Highlanders with sloth. Give an object to a Highlander, and let him be ensured in the fruit of his labour; and no man in Britain will exert more ardor and perseverance." Many other gentlemen, who had grown old in the Highlands, and had more intimate experience, than any young Nobleman from college, who neither spoke their language, nor had intercourse with the people, expressed the same sentiment; though I neglected to take down their words.



APPENDIX.

No. I.

PRICES OF VARIOUS ARTICLES IN SCOTLAND,
IN 1551.

COMMUNICATED BY SIR JOHN M. MURRAY, BART.

Prices of Wine fixed by Act of Parliament.

Such as come in at the East and North-Land Seas.

Burdeaux wine per tun, 20*l.* Scotch = 1*l.* 13*s.* 4*d.* sterling.

Rochel wine per tun, 16*l.* Scotch = 1*l.* 6*s.* 8*d.* sterling.

Retail Prices.

Burdeaux wine per pint, Scotch, ten pennies = $\frac{1}{7}\frac{2}{3}$.

Rochel wine per pint, aucht pennies.

Such as come in at the West Seas.

Burdeaux wine per tun, 16*l.*

Rochel wine per tun, 12*l.* or 13*l.*

Retail Prices.

Burdeaux wine per pint, aucht pennies = $\frac{5}{7}\frac{1}{2}$.

Rochel ditto ditto, sex pennies = $\frac{6}{7}$.

St. Johnston, or Perth, had the privilege of selling the quart twa pennies dearer than other burghs adjacent.

The

The breach of this law, would subject the party to the forfeiture of the wines, and all their moveable property. No adulteration of wine, under the like penalty, and loss of freedom (of the burghs, it is supposed) for ever.

If the present prices be contrasted, it will exhibit a very extraordinary increase of the expense of living.

An Account of some curious Prices established by the Scottish Parliament in 1551.

In which the liquid measures and money are all according to the Scotch standard used in these days. The money being one-twelfth less, and the liquid measure one-fourth greater, than what are at present in general use.

Of the Prices of Wild and Tame Meats.

Wild Meats.

The cran, five shillings=5*d*.

The swan, five shillings.

The wild guse of the great bind, twa shillings.

The claik, quink, and rute, the price of the peece auchteen pennies= $1\frac{1}{4}$ *d*.

The plover, and small mure fowle, price of the peece four pennies= $\frac{4}{11}$.

The black cock, and grey hen, price of the peece sex pennies.

The dousane of powtes, twelve pennies.

The quitaip, sex pennies.

The cunning, ij shillings unto the feast of Fastens, even nixt to come, and fra thine furth XII pennies.

The

The lapron, twa peannies.

The woodcocke, four pennies.

The dousane of laviorockes, and uther small birdes,
the price of the dousane four pennies.

The snipe, and quailzie, price of the peece twa
pennies.

Tame Meats.

The tame guse, XVI pennies = $1\frac{4}{17}$ penny sterling.

The capone, twelve pennies = 1 penny sterling.

The hen and pultric, aucht pennies = $1\frac{9}{17}$ penny sterling.

The chicken, four pennies = $\frac{4}{17}$ penny sterling.

The gryse, auchtene pennies = $1\frac{6}{17}$ penny sterling.

No. II.

COPY OF A LETTER RELATIVE TO THE FORMER AND PRESENT STATE OF AGRICULTURE IN THE COUNTY OF INVERNESS,

COMMUNICATED BY A GENTLEMAN INVESTED WITH
HIGH OFFICIAL AUTHORITY IN THE COUNTY.

[This Letter, from a gentleman who, perhaps of all others, is best acquainted with the former and present state of the county of Inverness, I subjoin, as an illustration and corroboration of various facts mentioned in the course of the Report; and am only concerned, that I have not permission to add his name.]

DEAR SIR,

As to the intelligence regarding agriculture, and
other improvements of this county, which you desire,
I pro-

I proceed to obey your commands with considerable diffidence; and I am apprehensive, that I shall require to treat this subject at a greater length than suits the bounds of a letter.

In my early recollection, about 45 years ago, very little attention was paid to agriculture in this county; for, excepting ploughing, sowing, and harrowing, and giving two ploughings to the lands intended for bear or bigg (for there was very little barley then used in this country), no other agricultural improvements were attempted; but by prosecuting this mode, some farmers, particularly a gentleman in the Aird district, who had a lease of a very long endurance, produced very great crops.

The State of the County, as to Plantations, and Enclosures, and Roads, &c. forty-six years ago.

With the exception of the plantation at Culloden, and two small plots at Achnagairn, in the Aird district, and at Muchovie, a part of the Castle-hill estate, I do not remember planted trees in this county, at that period, to any extent; and we had no hedges, and few or no enclosures. The land about Inverness was let from five to ten shillings an acre, and no attempt made to improve the waste ground, of which there was a great quantity close to the burgh of Inverness.

From the observations you made in your late tour through this county, you must be sensible what a favourable change the face of the country has undergone; as by far the greatest part of the lands are now enclosed with hedges, ditches, and stone dykes; most of the waste ground brought into cultivation; many tracts of
moors

moors and hills planted with firs, larches, and forest trees; and a rotation of crops introduced; the consequence whereof is, that the value of lands has started considerably, as those in the neighbourhood of Inverness now lett from 5*l.* to 6*l.* an acre; and so on in proportion at a greater distance. What appears to me to have been productive of these great national improvements, is the facility of intercourse caused by the establishment of military roads through the Highlands; which also pointing out to the inhabitants the great advantage of internal roads of communication, these have been prosecuted with attention; and by these means external manure has been procured from England and the South country, which has enabled the farmers to imitate their neighbours in the South, in the cultivation of their lands; and I have no doubt, that when the Caledonian Canal, and the roads now in contemplation by the liberal aid of Government, shall be accomplished, this spirit of improvement will extend to the interior of the country, and induce the heritors to convert all the lands capable of the plough, to agricultural management, and confine sheep farms to the mountains, which are incapable of cultivation, whereby the *population* of the country will be *restored*, and *increased*, and the usual supply afforded from the Highlands and Islands, towards the military strength of the nation.

What would principally contribute to the attainment of this momentous object, would be the heritors granting leases of longer endurance to the tenantry, with suitable melioration at the expiration; as no profession is more captivating than that of a farmer, or exhibits stronger incitements to exertion; and it is well known, that when improvements are begun, every progressive
step

step opens additional scenes, at which the farmer will not pause, provided he has a prospect of reaping the fruits of his industry.

Another cause which tended much to the improvement of this county, is the wise system adopted by Government, by encouraging the services of Highlanders in the army and navy of their country; as the gentlemen so employed, returning home with observations of the improvement of other countries, naturally began similar operations on their own lands; the success whereof induced others to imitate their example.

How, and by whom, Improvements were introduced.

From all these causes, I may trace the gradual progress of improvement in this county, to have proceeded from the exertions of the gentlemen after-mentioned.

1. Col. James Fraser, of Belladrum, having an early propensity to improvement, upon his return to his patrimonial inheritance from military service, began with vigour to improve his own property, which he has done by bringing into cultivation all the waste ground capable of the plough, enclosing his lands with hedge and stone dykes, and planting a considerable extent of his hills and moors.

2. The late George Ross, Esq. of Cromarty, having purchased the estate of Kimmylee, in the neighbourhood of Inverness, caused extensive tracts of the moor and hill-grounds of that estate to be planted; and having sent the late Mr. William Fraser, afterwards factor on the Lovat estate, to England, to study farming, that gentleman, upon his return, and attaining possession

possession of the Mains of Kinmylies, practised the several modes of agricultural improvements, which he had observed in England, with very great success; and paved the way to encourage others to act in like manner.

3. The late William Fraser, Esq. Balnain, W. S. having purchased the estate of Aldourie, within four miles of Inverness, planted very extensive moors belonging to that property; and by importing lime from England, and manufacturing the limestone dug in the lime quarries of Foyers in Stratherie, carried agricultural cultivation to as great a length, as the nature of the soil could admit.

4. Simon Fraser, Esq. of Coleman-street, merchant in London, and his brother, the late John Fraser, W. S. having purchased the estates of Borlum and Kinchyle, contiguous to Aldourie, established very extensive plantations in the moors thereof, and enclosed the whole Mains with suitable fences.

5. The late deceased Alexander Baillie, Esq. of Dochfour, having purchased that property from the Duke of Gordon, has demonstrated, that by labour and exertions, a bare unproductive farm may be converted into a most beautiful country seat; and the judicious manner in which the plantations in the hill are formed, the beltings and hedges surrounding the several fields arranged, and the means employed in meliorating the arable lands, which have been greatly enlarged by the improvement of contiguous waste ground, has rendered this place a most desirable situation.

6. The

6. The late Col. John Baillie, of Dunain, had planted very extensive tracts on the bounds of that estate, which marches with the estate of Kinmylies, and is at a short distance from Dochfour.

7. The country is also much indebted to the late Commissioners of the Annexed Estates, for very extensive plantations on the estate of Lovat, in the country of the Aird; to the Earl of Moray's large plantations on the estate of Petty; and to similar operations, although on a less scale, by Sir James Grant of Grant, on his estate of Urquhart; to Æneas Mackintosh, Esq. of M'Intosh, in Strathdearn; to Mr. Forbes of Cul-loden, for his additional plantations on his estate; to Edward S. Fraser, Esq. of Relig; to John Fraser, Esq. of Achnagairn, in the Aird; and to similar improvements by Mr. Mackintosh, Aberarder, Mr. Mackintosh, Farr; and Mr. M'Gillivray, Dunmaglass, in Strathnairn; to the very thriving plantations by Mr. M'Pherson of Invereshie; and Mr. M'Pherson of Belleville, in Badenoch; and to those by Mr. Fraser of Gertlec, and by Mr. Fraser of Farraline, in Stratherie; and to the like improvements by Col. Fraser, Culdu-thill, Major Duff of Muirtown; Provost M'Intosh of Drummond; Mr. M'Intosh of Holm; Mr. Fraser of Torbreck; and Mr. Baillie, of Leys, in the parish and vicinity of Inverness.

8. In this enumeration, of those gentlemen who have contributed to ornament and improve the county of Inverness, I should not omit to make memorable mention of the late deceased David Davidson, Esq. of Cantray, who having acquired a considerable fortune in England, and having made large purchases of landed property

property in this county, expended liberally, and bestowed much of his attention in enclosing and planting the moors, and improving very extensive tracts of waste ground, in different parts of his property; and although he lived to an advanced age, it was to be lamented, that a person of his disposition should not have continued longer in this stage of life.

By whom Waste Land was reclaimed.

I shall now subjoin to what I have above stated, the names of the following gentlemen, as having improved and reclaimed considerable portions of waste land in the vicinity of the town of Inverness.

From what I have already mentioned, you will readily perceive that Mr. Davidson of Cantray, Col. Fraser of Belladrum, and Mr. Baillie of Dochfour, deserve to be mentioned in the first class; and to those I may with confidence enumerate the following gentlemen: Provost M'Intosh of Drummond, who has converted a considerable quantity of moorish ground into very tolerable arable land, and meliorated the same, as far as the soil was capable, by application of lime, and a regular rotation of crops; Mr. M'Intosh of Holm has added considerable tracts of waste land to his arable property; and Mr. Grant of Bught, has also enlarged his arable lands by similar improvements. Mr. Gordon of Drakies, who lately purchased that property, and some of the contiguous lands, formerly belonging to Castle-hill, is occupied in liberally meliorating what was formerly arable lands, and improving the waste ground situated on his property; and to these, I cheerfully add the enlargement made to his property in the Aird, by Mr. Fraser of Achnagairn, in

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recovering

recovering from the sea many acres of excellent soil, which were formerly overflowed by the tide; the improvement of marshy and waste ground by Mr. Fraser of Relig, Major Fraser of Newton, and Mr. Warrand of Warranfield.

The spirit of improvement is not confined to the heritors of this district: and in the first class of tacksmen meriting to be here noticed, Mr. David Sheriff, at Kinmylies, ought to be mentioned, both on account of his extensive knowledge as a farmer, and his success in the improvement of waste ground in his possession, so far as he has encouragement from his heritor to accomplish that object. Lieut. Gen. Simon Fraser of Bruiach, while in possession of farms on the Lovat estate in the Aird district, displayed no small taste and genius in enclosing, subdividing, and improving his farms, and added much waste ground to the several fields which were in his occupation.

Was I not afraid to be too tedious, and have been confined by your requisition, to the vicinity of Inverness, I would mention several other heritors and tacksmen, who have had much merit in improving the waste lands of their respective farms; as although I remember great tracts in my younger years, the whole of it is almost now brought into due cultivation, in so far as contiguous to water-carriage or in the vicinity of manure.

I am, dear Sir,

Yours, &c.

No. III.

A DISSERTATION RELATIVE TO THE AGRICULTURE
OF BADENOCH AND STRATHSPEY.

BY THE REV. JAMES M'LEAN, MINISTER OF KEITH.

SIR,

I have heard with much pleasure, that the proprietors, and other gentlemen of Strathspey and Badenoch, have formed themselves into a society for the encouragement of agriculture and industry, in those districts. The attention and patronage of her Grace the Dutchess of Gordon, with which I understand the Society is honoured, augurs well for its success; and the well known good sense, extensive information, and public spirit, of the constituent members of this Society, afford also the best grounds to hope, that their exertions will prove highly beneficial: it is my earnest wish that they may. The success of measures, of which it is the object to meliorate the condition of the inhabitants of my native country, would be to me a very high gratification: and let this be my apology, if any apology be necessary, for submitting, by your means, the following hints to the consideration of the Society.

To introduce a better management, both of land and stock, than the present, and to encourage the growth of flax, and the domestic manufacture of flax and wool, are the objects of the Society: with regard to the former, the first question comes to be, what are the prevailing errors in the present management? And the next, what means shall the Society adopt, to induce the people to abandon their errors, and to betake themselves to a better practice? As to the management of

land, the great and prevailing fault in the agriculture of Badenoch and Strathspey, and indeed of the greatest part of the North of Scotland, till of late years, appears to me to have been this: that the part of the farm, say a fourth or a fifth, annually manured, was reduced as fast as possible to sterility, by cropping; of which the consequence was, that the tenant derived little or no benefit from one-half or three-fifths of his arable land. Now, on whatever other points good farmers may differ in opinion, some preferring one rotation, and some another; some one compost, and some another, &c.; yet *all* good farmers agree in the following, as the *first* principle of good management; that every part of the farm be made to produce a *good* crop of something every year. If the Society can persuade the tenants of Badenoch and Strathspey to give up their present system (if a system it may be called), and to act upon this principle, they will have gained a great point; they will indeed have surmounted the principal obstacle to the improvement of the country. But to effect this, I cannot think that giving premiums for one, two, three, or four acres of turnips, or of sown grass, will be sufficient. I have myself seen excellent turnips and sown grass in Badenoch; but, with much regret, I have also seen the land which carried these crops, three years thereafter, in a worse state, more unfit for producing any crops, than before it was prepared for them; and then it was inferred, that the new method of farming would not answer in that country.

It may indeed be observed, that in the infancy of agricultural improvement in any country, the short-sighted policy of killing the hen that lays the golden eggs, for the most part prevails. A field is cleaned by fallow

fallow or green crop, well-manured, and sown with grass-seeds; in short, put into excellent heart: all this is well: after lying two or three years in grass, it is broken up for oats: this is well too: but then a second, and a third crop of oats succeed; the farmer thinking he can never be sufficiently repaid for his outlay. After the third crop of oats, which is probably a very poor one, he finds himself just where he set out; nay, I would consider a field that had been managed in the old way, as a more valuable subject, *cæteris paribus*, than one which had gone through the course I have described. A still more injudicious course is sometimes followed. Grass-seeds are not sown with the crop which immediately succeeds the turnips; perhaps they are sown with the next crop, in which case both the grass, and the crops which succeed it, must be very indifferent; but sometimes even when turnips are raised, grass is no part of the plan, but the field is cropped as long as it will produce any thing; than which nothing certainly can be more ruinous. This is no imaginary picture, but an account of what I presume you have seen actually happen in your own neighbourhood.

The Society propose to give premiums for the best turnips, and for the best sown grass. This, I hope, will induce many to make trials of both; but if the after management is not judicious, will the trial turn out to be ultimately for their interest? I am inclined to think it will not; in which case, the Society's premiums will not induce them to repeat the experiment.

It is therefore humbly submitted to the Society, whether it would not be an improvement upon their plan, at the same time that they offer premiums for turnips and sown grass, that they should also hold forth some encouragement in the way of premium or otherwise, to

induce the tenants, *after* they have brought their land into heart, not to overcrop it. Let premiums be offered to the first three or four tenants who shall lay out the arable part of their farms into four, five, or six equal divisions, and who shall have one of these divisions under turnips, one sown with bear, and one, or at most two, with oats, and the rest in grass; and let no tenant be admissible as a competitor for any of the Society's premiums, who has taken more than two crops of oats after grass, and who has not laid out the whole year's dung for turnips and potatoes. In short, let an approved rotation of cropping be not only encouraged by premiums, but strongly recommended, I will not say enforced, by the local influence of the several members; and if the tenants are once persuaded to adopt such rotation, they will soon find it their interest to stick to it; they will find that they have more grain and more food for cattle than formerly; and also, that the expense of seed and labour is considerably less.

And here let me mention a circumstance, which, I firmly believe, has, more than any other, contributed to deter the common tenants from any attempt towards improvement. They have hitherto seen such attempts made only by *gentlemen*, who had something else than their farms to depend upon for a living, and often attended with an expense far beyond the ability of persons in their situation, just able to make the two ends meet, and no more. They observed, that these gentlemen improvers built houses, and dykes, purchased south country horses, expensive harness and implements, cleared away stones, grubbed out brushwood, and drained bogs; all which, though very good, yet requiring a great deal of money, and not being productive of immediate profit, they justly concluded to be

fit

fit *only* for gentlemen, who either had money to throw away, or could afford to lie out of it.

But the common tenants will now be better instructed : they will be made to understand that expensive houses, horses, and implements, are only the “pomp and circumstance” of good farming, not essential to it : that with the houses, horses, and implements which they have, nay, without abandoning the barbarous practice of ploughing with four garrons abreast, they may, by adopting the rotation which the Society will recommend to them, make the *whole* of their arable land as productive, if not more so, than that part of it on which at present they lay out their dung. When this happens, and I doubt not but it will happen, they will find themselves in condition to undertake, and will accordingly set about, the more expensive operations of enclosing, draining, grubbing, &c. and they will also cease to be content with their present mean accommodations and implements : finding their circumstances improved, they will *choose* to have these things in a better style. Much of the success of any business, depends on beginning at the right end ; and of none, I believe, more than of that now under consideration.

A question arises here, what rotation is the most proper one to be recommended to the tenants of Badenoch and Strathspey ? I shall give you my opinion ; but be pleased to observe, that I do so with the utmost diffidence ; for it is a question which experience only can decide. Suppose a farm to consist of high ground, out of the reach of the overflow of the river, and of haugh ground, part of which is liable to be overflowed by ordinary, and the rest only by extraordinary floods : I would have the high ground divided into four equal parts ; on one of which, let the whole dung be laid out

for turnips and potatoes; next year, bear or oats, with grass-seeds; third year, hay; fourth year, oats; which finishes the course. If there are twenty acres of high ground, the tenant will have ten acres of corn, five of hay, and five of turnips and potatoes; and it appears plain to me, that, following this method, he will have a great deal more (perhaps double the quantity) of food for man and beast, than if he continued to labour in the old way; and this without incurring any additional expense.

I am aware of some objections, which I shall endeavour briefly to obviate.

1st, It will be objected, that there will not be enough of dung for five acres. I answer, that, with proper attention and management, there will be enough. Let the stable and byre dung lose none of its moisture by standing on a hillock, or on a declivity, but let a hollow place be made to receive it, sloping gently from the circumference to the centre; and let a considerable proportion of moss earth and river sand be mixed with it, always beginning with a foundation of moss earth. If still there shall be a deficiency, I know no other proper remedy, than dividing into five parts in place of four, and having two of the divisions in grass; and surely, even a moderately attentive farmer will be able to dung a fifth part. I prefer the four, to the five-shift course, because generally the oats are better after one year of grass; and the soil of Badenoch, if left longer in lea, is apt to be over-run with quicken, or couch-grass.

But, 2dly, it will be said, that a much greater expense will be incurred for grass-seeds, than if the field were allowed to remain in grass for two, three, or four years. Allowed: but then the superior value of the
crop

crop over the *whole* twenty acres, will do much more than repay this extra expense. Let me observe, besides, that under the present management, the expense for seed is greater than it would be, should the rotation I propose be adopted. At least fifteen of the twenty acres are at present sown with bear and oats. The result of the comparison is so obvious, that it need not be stated.

A third, and a much more serious objection than either of the former, occurs to me; and it is this: a great deal of the land in Badenoch will not produce clover till it get lime; and to recommend the laying on of lime, to people in the situation and circumstances of the common run of tenants in that country, would be the next thing to mockery and insult. What is to be done in this case? I cannot say with confidence; yet have some reason to think, that Lord Meadowbank's dung-hill, with the addition of *great* sand from the bed of the river, would afford a remedy. The trial might be made; and should it fail, there appears to me to be only one other alternative, till the tenants get rich enough to afford lime; and that is, sowing ryegrass alone, without clover. The hay crop would be equally heavy and nutritious as if there were a mixture of clover: the loss sustained, would be the want of a second cutting, and of the benefit which land derives from a leguminous crop.

I know not whether I should mention as a fourth objection, a circumstance, which I have heard stated as a bar to the laying out of a farm into equal divisions; and which is, that in many, nay, most of the farms in Badenoch, the high grounds are broken and disjoined by baulks, cairns, hillocks, and brushwood. This is indeed an inconvenience; but certainly it is no
bar,

bar. For suppose the twenty acres to consist of 100 unequal patches, it is surely very possible, nay, it cannot be very difficult to lay them out into four or five equal parts. If any man will still say that it is impossible, I can only answer, "make the trial:" to argue, would be in vain.

The removal of these baulks, &c. would indeed be an excellent improvement; but shall not the land which you have, be put into heart, till, at an expense which you cannot afford, you add as much more to it?

Permit me now to state, what I would consider as an improved management of the haugh ground. The present practice is, to plough, and sow with oats, the dry part of it for three years, and to leave it out for other three. Now I very much doubt, whether it would not be more for the interest of the tenant, never to plough it at all. At the utmost, I would have no more ploughed than has been tathed the preceding year; and of that, I would take only one crop of oats, harrowing the ground well, and sowing rye-grass seeds along with the oats. Perhaps it would be found as profitable, considering how frequently corn growing on the low grounds is injured by frost and mildew, to take natural hay after tathing; but I have no doubt, that either of the methods suggested, would be more advantageous than the present one: the benefit of the tathing would be longer felt, and as the tathing proceeded, the quantity of natural hay would be increased: a consideration of great weight in a country where the laying in a large stock of winter provender is the principal object of the farmer. The remainder of the dry part of the meadow, which has not been tathed, can, with advantage, be used only for summer pasture to the cattle.

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With regard to the wet part of the meadow, it does not appear to me, that any thing more can be done, till it be drained and secured from the overflow of the river, than, after setting apart, and enclosing with a ditch, garth, or both, a convenient portion of it for a horse park, that as much natural hay should be got from the rest of it as possible.

And here let me express a doubt, whether the cultivation of flax will ever turn out to be profitable in your country. Is it not both a very precarious, and a very scourging crop? Does it not *often* fail completely? Is it ready for pulling, except in some very favourable years, in time to be watered the same season? And if not put green into the water, will the flax be good? And does not the giving it ground, somewhat diminish the quantity of winter provender? not to mention the high price of seed, and the unavoidable expense which attends the management of it from first to last. Far be it from me to assert positively, that these objections are well founded. All I mean by stating them, is, to induce the Society to pause, and not, without due consideration whether they are so or not, to attempt to force the cultivation of a plant, for which the soil and climate of the country may not be calculated. *Many* articles of convenience may be purchased at a cheaper rate than they can be raised.

I observe that the Society offer premiums for the best bulls, with the laudable view of improving the breed of black cattle. My countrymen are, generally speaking, excellent judges of cattle; and the breed they have, appears to me to be a very good one, and well suited to the country; though it is doubtless susceptible of improvement, and ought to be improved. It is chiefly in the management that they err; and, considering

APPENDIX.

dering that their chief dependence is on cattle, I cannot help thinking it strange, that they should err so egregiously as they evidently do. On every farm, with scarcely one exception, an overstock is kept: if the cattle are brought through, that is considered sufficient; and at the end of a severe winter, they appear in the most miserable plight; those of them intended for sale, being seldom fit for market before the end of summer. Is there not here an evident loss? Is there not more profit from one beast well, than from two poorly, or indifferently kept? Will not a beast, if in good order in the month of May, fetch more money than, than it will fetch in October, if it is then in no better condition? It is therefore humbly submitted to the Society, whether it would not be an useful application of their funds, to give premiums to the three or four tenants, who shall have their *whole* stock of black cattle in the best order in the month of May: or who shall in that month have the beasts intended for sale, in the best marketable condition. An emulation of this kind, besides the other good effects of it, would prove an incitement to the cultivation of turnips and sown grass, as, without these, it is not easy to keep cattle in good order through the winter. Let me also submit to the Society, whether it would not be for the interest of the tenants, that they kept no larger stock of black cattle than they could keep well, without sending any part of it to the hill at any season of the year; and that the hill-grass were applied exclusively to the maintenance of sheep.

I shall only add further, upon the subject of black cattle, that in every stock, there appears to me to be too great a proportion of milk cows. A milk cow is a great eater; and her milk alone, notwithstanding the
high

high price of butter and cheese, is not an adequate compensation for her keeping through the year. Why then should there be a greater number on a farm, than is sufficient to keep up the stock? There should be fewer cows, and every calf should be reared, in place of one for every two cows, or two for every three, which I understand to have been long the general practice. Suppose a tenant has twenty cows, that he rears ten calves, and that he sells at three years old; his winter stock will be fifty head, of which he sells seven three-year olds and three old cows: suppose that he is induced to reduce the number of his cows to fourteen, and that he rears all the calves: his winter stock will be fifty-six head; and he will have to sell annually twelve three-year olds and two old cows, that is, four beasts more than formerly: and if the expense of keeping is the same in both cases, or nearly so, which I presume will be admitted, will he not be a gainer by the change? I am inclined to think, that the four additional beasts sold, will more than compensate the deficiency in butter and cheese.

Before I conclude, allow me to express my warmest approbation, of the encouragement proposed to be given by the Society to the domestic manufacture of wool: a manufacture well suited to the state and circumstances of the country; and indeed, the only one that appears to me to be so. It would contribute much to the success of this manufacture, that carding mills were erected, and persons procured to manage them, who had been regularly bred to the cleaning, sorting, and carding of wool. Every tenant would send his wool to the mill, which would save to the family the most difficult and laborious part of the process: then it would be spun in the family, and, if not sold in yarn,
sent

sent to the weaver to be wrought into blankets and plaiding; for which there would be no danger of finding a ready market, as there is always a brisk demand for these articles from the Low Country. Some intelligent and enterprising individual will probably erect a carding mill, considering it as a good speculation. Such individual would certainly deserve to be encouraged; and perhaps the best encouragement in the power of the Society to give to such a person, would be, to offer premiums to the three or four tenants, who should sell the greatest proportion of their wool in a manufactured state, the quantity being not less than stone.

Let me hope, that the hints offered in this letter, to the consideration of the Society, will not be deemed altogether unworthy of their attention. They are well meant, and the fruit of some observation; and, though they may not appear, in every instance, to be well founded, they may, nevertheless, give rise to discussions favourable to the advancement of those important objects which the Society have in view.

I am, Sir,

Your most obedient servant.

A Note by the Author.

Mr. McLean's judicious paper was written some time before this Survey took place; so that some of the errors complained of had been rectified in the year 1804, and more have, no doubt, disappeared since that period.

No. IV.

BREEDS OF SHEEP.

Answers by Mr. Robert Oliver, of Cullachie, near Fort Augustus and Corrigearac, to Doctor Robertson's Questions, relative to the success of different Breeds of Sheep in the County of Inverness. 4th December, 1804.

 QUERIES.

1. How long has the Cheviot breed of sheep been on your farm, and in your possession, or in your neighbourhood?
2. Were they as hardy at their first introduction into that country as they have become since?
3. Are they now as hardy as the Linton or black-faced breed?
4. Ought they and the black-faced breed to be treated in the same manner in all respects?
5. Are both kinds equally liable to disease, and other casualties?
6. What is the average weight of the carcass, and of the fleece of both kinds, in the same keeping?
7. Will the same extent of pasture feed equal numbers of both kinds?
8. Are there any other Cheviot breeds in your neighbourhood? how do they thrive?
9. What is the complexion of your farm? Is it as mountainous and stormy as the other parts of Inverness-shire, near the West Coast?
10. How, upon the whole, is the Cheviot breed calculated for the Highlands?

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THE ANSWERS.

1. The Cheviot breed of sheep has been on my farm and in my possession eight years past, at last Whitsunday; and I think they have been in my neighbourhood for six years.

2. I am of opinion, that they were as hardy at their first introduction as they are yet.

3. I think they are as hardy as the Linton or black-faced breed.

4. When I changed from the Linton to the Cheviot breed, in the time of changing, I made no difference in their treatment, but the smearing; and I am of opinion that the Linton breed would be the better of smearing.

5. I think the Linton breed are more liable, when lambs or hogs (year-old sheep) to the braxy.

6. I suppose the weight of the carcasses to be nearly equal; and I think wedders three years old will weigh about 14 lb. per quarter, and slack or draught ewes about 10 lb. per quarter, and of a running stock of ewes, wedders, hogs, &c. of the Cheviot breed, the wool will run about seven fleeces to the stone of 24 lb. English: I mean when washed, and the wool of the Linton breed will run about the same, unwashed: I mean when they are in the same keeping.

7. I have no doubt, but the same extent of grass will feed equal numbers of both kinds.

8. There are several other farms in my neighbourhood, stocked with the Cheviot breed, and doing very well.

9. The complexion of my farm is in general covered with heath and moss; and although I have some pretty low ground for winter foggage, yet upon the whole, it is

is very mountainous and stormy, it extends to the top of the well known mountain of Corrigearac, and I certainly think it is fully more stormy than any part of Inverness-shire, that I have seen upon the West Coast.

10. I certainly think the Cheviot breed, upon the whole, the preferable stock for the Highlands.

No. V.

Answers by Thomas Gillespie, Esq. near Fort William, to the Queries which Doctor Robertson had sent to Mr. Oliver and him.

1. The Cheviot sheep have been on my present farms five years, and in the neighbourhood ten years.

2. Cheviot sheep, like all others, are, when thoroughly acquainted with the lands on which they are to pasture, more hardy, and better calculated for these lands, than sheep newly brought in, and much easier to keep on strange land than black-faced sheep, being less apt to stray: of course a change of stock can be made with less trouble, where Cheviot sheep are put on.

3. In the lambing season, the lambs are more tender than the black-faced, particularly with heavy rains; and in barren and unkindly springs, the ewes have not so much milk to support their lambs as the black-faced.

4. The difference of treatment between the Cheviot and black-faced is not material, only the former require all to be smeared, for when lean, they lose the wool, which is the only advantage to be derived from them over the other.

5. Both kinds seem equally liable to disease and casualties, after the Cheviot lambs are two days old; be-

fore that, cold and wet kill them in much greater numbers than the others, and is a strong objection to the Cheviot, where the country is liable to heavy rains.

6. The weight of the carcass of both kinds, is according to the quality of the lands they are on, and the plenty or scarcity of food left on them by light or heavy stocking; but if any difference, in favour of the black-faced; and the fleeces in the proportion of one-fourth more weight on black-faced, when treated in the same manner with Cheviot.

7. The same extent of pasture will keep a ninth part in number more of the black-faced kind.

8. There are several extensive farms in my neighbourhood, stocked with Cheviot, and thrive very well.

9. My farms are mixed with almost every kind of hill-grass, that answer the different seasons of the year, with a large proportion of soft grass; but more stormy than any on the West Coast of Inverness-shire, and part of them equally mountainous.

10. Upon the whole, the black-faced is, generally speaking, better calculated for the Highlands than the Cheviot; they are of a more active disposition, and much better for their food on rocky, steep, wide extended hills, both summer and winter; and indeed the only inducement to try the Cheviot kind is the wool, for in all other respects, there is more profit and safety in the black-faced, on farms of the above description. On the contrary, where farms are of easy access, smooth, and free of rocks, and the hills not very steep, and not stormy, I believe the Cheviot breed most profitable, on account of the wool, and the kind of stock that ought to be preferred. A very prevalent error in sheep farming is, overstocking the farms all over the Highlands. That practice diminishes the value of stock, and makes it

it less safe in bad winters; and in every respect the produce less valuable and less secure to the farmer. Doctor Robertson being the mean of rectifying this mistake, would be of essential service to his country.

No. VI.

BRITISH ANTIQUITIES.

FORTRESSES BUILT WITHOUT CEMENT.

FORTRESS AT GLENELG.

FROM some notices formerly given, in the course of this publication, it may probably be recollected, that the mode of constructing the places of strength in Caledonia, appears to refer to three distinct æras in the architecture of the natives. The most ancient of these, was building fortresses of stone alone, without mortar or cement of any kind. In this case the stones were of great size, to prevent their being easily removed. Their sides were generally straight lines, to make them lie more closely together, and their length, which far exceeded their breadth or thickness, and extended across the wall, leaving the end of every stone outward. These precautions, rendered it impracticable to pick out one stone, and thereby begin a breach in the wall. The more we attend to the mode of constructing these walls, the more we must admire their strength, and the art of the builders. Their remains are not unfrequent in the county of Inverness, both in the Islands and elsewhere.

The most extraordinary of them all, is to be seen at Glenelg, within two miles of the passage to Skye.

This edifice is of a circular form, which had been universally adopted, and with much judgment, as containing more area within the same length of wall, than any other figure. The height is about thirty-four feet, and the diameter of the area thirty. At the base there are two walls, the outer wall four feet thick, and the inner wall the same, and the open space between the two walls four feet also, making the whole foundation twelve feet, from the outside to the inside of the building. The interior wall stands perpendicular; the exterior inclines inward as it ascends, and joins the former at a considerable height from the ground. The stones are chosen or shaped with great accuracy, placed with astonishing regularity, and very artfully inserted into one another.

About six feet from the foundation, the two walls are bound together by long flat stones, which either served the purpose of a stair, or second floor, or strengthened the place, by connecting the two walls; or facilitated the labour, in raising other stones to the upper part of the building; or may have been useful in all these respects.

Where the two walls meet, there is a regular row of large flags, which project horizontally towards the area from the face of the inner wall; and a little higher, another row of similar flags, projecting in the same manner. These perhaps were intended to supply the place of a stair in the inside, or for mounting the rampart.

The inner wall alone has windows or lights, which are about eighteen inches wide, and from two to three feet high, and placed in a direct line above one another.

The manner of dressing these large blocks of stones, and raising them to such height, is utterly unknown.

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This art, which was requisite not only in rearing such structures for defence, but in carrying the stones of the druidical temples frequently from a great distance, baffles all conjecture which has any air of probability, without the aid of mechanical powers.

Doctor McPherson's opinion is very probable, that the space between the walls was for holding stores and beds, and a place of arms; that the great inner walls were never roofed in, but that the besieged lived in huts in the area.

CASTLE SPYNIE,

In the Aird, is another of those fortifications built without any cement in the wall. The circumference is 54 yards; the wall is nine or ten feet thick, and it stands on the summit of a hill, which is about 700 feet above the adjacent plain.

Whether there were two concentric walls, with an open passage betwixt them at the foundation, as at Glenelg, cannot be determined, because the place is too much demolished to ascertain that and other circumstances; but it evidently was constructed prior to the use of cement by vitrification or lime.

DUN-DA-LAR.

In the district of Badenoch, and on the farm of Dalchully, there is another of these rude primeval fortresses, which is situated on the summit of a hill not very remote from the present farm-house. The shape of the hill is conical, whose vertical point rises 200 yards from any contiguous ground. This ascent is uncommonly steep and rocky, precluding all access ex-

cept on the south side, where a narrow path seems to have been cleared, for a road. The top is a most beautiful green horizontal plot of ground, which appears to have been dressed, commanding a very extensive prospect of the valley in all directions. Around this green there was built a very strong wall of flat stones, or flags, without mortar of any kind, whose thickness is 18 feet; the circumference 1500, and the remaining height eight feet perpendicular, where it is most entire.

Upon the north-east side there was a turret, or citadel, constructed with the same materials, whose wall is also circular, and contains a reservoir for holding water to supply the besieged, when the place was invested. The wall of the citadel seems to have been extremely massy, from the quantity of stones that are fallen from it, which is much greater than from any other part of the building. The labour of collecting and carrying up-hill, such an immense heap of stones as these buildings required, must have been great beyond conception, when we reflect, that very likely it was performed by mere bodily strength, without the aid of any mechanical powers.

On both sides of this hill, there are two other rocky eminences, but much inferior in size and altitude, which might however have been the cause of the name given to the principal one, *Dun-da-lav* (the two handed hill).

At the distance of a few miles down the valley of Badenoch, there is another fortress, similar to this one, at Dalchully, but not so entire, which probably communicated with Craig-elachy, still farther down. In most of the vallies in Scotland, there were chains of posts, which were necessary for alarming the country in the
hour

hour of danger, and as places of protection to the feeble part of the inhabitants.

VITRIFIED FORTS.

CRAIG PHADRIC,

A conical hill on the north-west of the town of Inverness, which is 1150 feet above the river, has a commanding prospect of that country, especially eastward along the Murray firth, to the distance of forty miles. The summit of Craig Phadric was evidently fortified. A road of ten feet in breadth, which cut the rock in a circuitous direction, led to the citadel or fortress on the top of the hill. This citadel is of an elliptical form, corresponding to the natural shape of the mountain, and contains an area of about 220 feet long, and about half as broad, which was originally defended by a strong vitrified wall. Below this wall there was at some distance a line of circumvallation, apparently of equal strength, and of the same materials. This outer wall does not extend quite round the hill, because a rock on the north side is so steep as to prevent access from that quarter. The east side, where the hill is most accessible, is defended by a great mound, and two other outworks, segments of a great circle, which are carried parallel to one another, enclosing some small tumuli.

This singular place has attracted the attention of the curious in no small degree. Some maintain, that the hill or mountain on which the fortress stands, is a volcanic production, and that these walls are built with

masses of the lava. Others are of opinion, that in the middle ages strong-holds of this kind were constructed by parallel enclosures made of strong piles of wood, joined together with lateral beams. When these enclosures were of the height proposed, and at the distance of some feet from each other, the intermediate space was filled with such stones, as were known to be put easily in fusion by the power of fire. Then the whole mass was burnt or vitrified into a solid rampart. Others again suppose, that the habitation was in its most perfect state as last-mentioned, before any fire was applied, and that the vitrification only took place, when these fortresses were set on fire by accident, or by an enemy, with an intention to be demolished.

These opinions are mere conjecture; and in all conjectures on the same subject, that which has the greatest shew of probability, ought to have the preference; for although we find, by the account we have of Cook's Voyages, that the savage inhabitants of the islands in the South Sea, frequently defended themselves within strong palisadoes; and although, on the other hand, we may suppose that there is a possibility of lava being broken down into masses; yet many circumstances, in the present case, concur to render the opinion most probable, that the vitrification was intended in the first construction, and that the fortress was not deemed complete, until that took place; because in this instance, the stone composing the rock of Craig Phadric, is that commonly known by the name of plumb-pudding, which is easily vitrified; and especially because there is a variety of such vitrified structures in the North Highlands, which seem all to have owed their origin to the same cause.

Craig Phadric was well adapted not only to be a
place

place of strength, but a post of observation, situated on the termination of a range of mountains, and commanding a wide and extensive prospect. The tradition of the country ascribes the same use to all the vitrified forts, in whatever district of the county they are situated.

DUNGHAIREDGHALL,

In the parish of Kilmaalie, and a few miles north from Fort William, is another of these vitrified forts, the most remarkable in the county of Inverness that occurred to me, next to Craig Phadric; and therefore the only one to be taken notice of in this place. Its form is also elliptical, so far as the summit of the hill could admit of that figure; the remains of the wall are from two to four feet high above the rubbish; and the green hill on which it stands, about 400 yards of perpendicular height, which is commanded by no other higher contiguous ground; a precaution suggested by common sense to mankind, not only in constructing that fortification near Inverness, on the East Coast, and this one near Fort William on the West; but in all other places of the same kind, and in every age. The same figure, the same materials, a similar elevation, a similar vicinity to the sea, may lead to an opinion, that the manner of constructing these two in this county, was the same, and that the builders of both had the same objects in view.

THE CASTLE OF INVERLOCHY,

Is situated on the east bank of the river Lochy, about two miles north from Fort William. This building
appears

appears to be evidently posterior to the vitrified fortifications above-mentioned, in respect of antiquity, not only by its square figure, and its turrets, but by the circumstance of its being constructed with lime for a cement to the wall, and stones, which in many places bear the marks of the mason's chisel; and yet there is no documentary proof, and hardly any tradition, to ascertain its age, or to inform us of the buikler's name or quality. It is a magnificent pile of a square figure, with round towers at the angles, and a ditch surrounding the whole, which enclosed a space of 7000 square yards. The flanks measure 90 feet in length within the walls, and about 30 feet in height, where most entire. The towers are nine feet thick at bottom, and finished off with eight feet at the top. Their general height seems to have been forty feet, but that on the west, where the ground was lowest, appears to have been 50 feet high, and 42 feet in diameter over the walls. This is called Cummins' Tower, because it is probable that the Cummins lived there, after the kings got possession of all Scotland, by the overthrow of the Picts.

The ditch was from 30 to 40 feet broad all round, and approached within 36 feet of the ramparts and towers. The two gates, one on the east and another on the west, are nine feet wide, and finished above by an arch of the same height; the eastern gate had a draw-bridge. Three of the towers had sally-ports, well defended by loose holes for shooting arrows; each of these had a door which communicated with the area of the great square within. The towers had slits in the wall from head to foot, to defend the side walls of the castle, and seem to have been roofed in, and to consist of two floors, by the niches in the walls for holding joists. The stair to the second floor was in the heart
of

of the wall (similar to the construction of the more ancient fortress in Glcnelg, where an open passage of four feet, which probably contained a stair to the second floor, was carried round the whole building), between two strong walls, and from thence a door leading to the top of each flank, where the besieged could pass and repass along the whole wall, between two curtains, one on either hand, of substantial mason-work two feet thick.—Whoever wishes for more particular information, may consult the minute and distinct account given by the ingenious Mr. Thomas Ross, Minister of Kilmanivaig, printed in vol. xvii. of the Statistical work of Sir John Sinclair.

TOR CASTLE,

Which is situated on a rock in the river Lochy, two miles above the great castle of Inverlochy, is a relick of antiquity worthy of notice. So far as one could guess by the eye, what remains of the wall is about 40 or 50 feet high, built over a vault for the under floor, as many of these towers were constructed. It stands on the brink of a precipice, which divides the river, and forms two impetuous cataracts, that unite immediately below the fortress; the branch on the west being the least body of water, the entrance in that direction was secured by a draw-bridge; and the impetuosity of the stream, and the dashing of the waters, forcing their way through the pointed rocks, rendered all access extremely hazardous, or rather impossible, from any other quarter.

The place where Tor Castle stands, must have been originally a *green hill*, or small eminence, as the name implies, which the builder had to clear away before he could get at the rock for a foundation. Some persons ascribe

ascribe this castle to Bancho, Thane of Lochaber, ancestor to our beloved Sovereign; others maintain, that it was the habitation of the Camerons of Lochiel. Both may be true. After the designation of Thane was superseded, by the introduction of modern titles of honour, and after the posterity of Bancho mounted the throne of Scotland, by being married to the heiress of the Bruce family, what was to prevent, or render it improbable, that the family of Lochiel had lived in Tor Castle, when they got possession of the adjacent grounds? No place of residence could be more secure from a sudden assault.

THE CASTLE OF URQUHART,

Stands on a projecting rock, on the west side of Loch Ness, at an equal distance from Inverness and Fort Augustus. The Loch washes the east side, and the other three sides were defended by a rampart, a ditch and draw-bridge. The wall contained a space equal to the accommodation of a garrison of 500 or 600 men.

The Castle of Urquhart maintained an obstinate siege against Edward I. of England; and is said to have been the last place in the North of Scotland, which he reduced in 1303. He was so exasperated at the resistance he met with in this place, that he basely put the Governor, Alexander Bois, and his brave garrison, to the sword. Upon the forfeiture of the Earl of Ross, who joined Crawford and Douglas in rebellion against the King, the lands and castle of Urquhart were annexed to the Crown, and the Laird of Grant was appointed King's Chamberlain, for the management of the property. James IV. bestowed the lands and castle of Urquhart upon John Grant of Freuchie, ancestor to the

the present Sir James, for his own and his predecessors' stedfast adherence to his Majesty and his royal progenitors; and the property remains still with that family.

THE PARALLEL ROADS OF GLENROY,

Are a great curiosity, and must have been a work of immense labour. The maker of the parallel roads, was unquestionably a personage of great influence and authority, who could command the labour of such a multitude of people as this undertaking seems to have required.

Glenroy stretches seven or eight miles north-east from the House of Keppach, in Glenspian, where the river Roy falls into the river of the latter glen. On each side of the water of Roy, and extending to the whole length of the glen, there are three roads, parallel to other three on the opposite side, drawn in a horizontal direction, and following the windings of the mountains, along which they are made. The torrents from the mountains have, in the course of ages, made great breaches in different places, especially, as might be expected, in the lowest on either side, so that two of them are more effaced than the other four. Their breadth in general is from 60 to 70 feet, and the distance betwixt two of them has been measured, and found to be 180 feet.

Similar roads are met with in two of the adjacent glens, but they are less entire than those in Glenroy. The one opposite to the House of Keppach, is carried along the course of the Spian; its direction being nearly east and west. But none of these are equally broad or long with those in Glenroy, nor have the glens in which they are situated, the same parallelism in the direction

direction of the mountains on both their sides, as to admit of opposite roads that were parallel.

While we believe that these roads were executed by human labour, and that such a vast undertaking must have had some great object in view, we are left very much in the dark, there being no record, to assist even in forming a probable conjecture, as to the period in which they were formed, the persons by whom they were made, or the purposes to be served by them. Even tradition itself gives but a faint ray of dubious light. Nevertheless, one thing seems to be unquestionable, that whoever performed these works, were rude and unlettered men, incapable of leaving any record by inscription or otherwise, of what they had done. Another circumstance worthy of notice is, that the hills in this neighbourhood, no less than in Glenco, and elsewhere in the West Highlands, still retain the names of Fingal's heroes.

To suppose that works of such magnitude were undertaken without some purpose, which was deemed momentous at the time of their execution, would be equally absurd with the conduct of those who could be thought wantonly to engage in such Herculean labours. Mankind, in all ages, exert the same degree of common sense; education does not implant understanding in the human mind; it only improves it by culture. The only useful purpose for which these roads seem to have been made, was hunting; and while the inhabitants subsisted mostly by their success in the chase, every measure, which could facilitate that end, must have been accounted valuable. No place was better adapted for hunting than Glenroy, embosomed within two lines of lofty mountains, which range along its opposite sides, while the valley afforded the richest and most abundant

abundant pasture, and at the same time was covered with wood.

On hunting days, it is well known, from the names and situation of other places in Scotland (though not on the same scale with Glenroy), that the deer were annoyed on all hands by the noise of men and dogs, except at one narrow defile, which they were wont to pass in safety. No sooner had they entered, than all egress was prevented, either by the precaution of having before-hand planted strong stakes, entwined with tough underwood, or by the common huntsmen, who speedily ranged themselves at the entrance. Thus the game, enclosed as it were in a fold, was at the mercy of the principal huntsmen, and their company, until they were satiated with sport. The roads of Glenroy facilitated the access of the archers to the deer, whether they ran above or below, and also rendered it convenient for the spectators, whether on foot or on horseback; whether ladies or gentlemen, to follow the sport wherever it was. The remains have been found, of the stakes that were fixed in the ground in this place, to prevent the escape of the deer: and the plain in the bottom of the valley, is known to this day by the name of *Dal-na-scilg, the plain of hunting*.

It is presumed, that the use to which the parallel roads were applied, is rendered highly probable, from the united concurrence of all these circumstances; but it remains to be observed, that as to the *author* of them, another tradition remains in the country. Some, as was hinted above, attribute the construction of them to Fingal's heroes, while others lean to the tradition which ascribes them to the kings of Scotland, who lived not only at Dunstaffnage, but are supposed to have built and lived at the Castle of Inverlochy, which is
only

only eleven miles distant from Glenroy; and from thence to the King's House, in the isle of Loch Laggan, the distance is still less.

There does not appear to be any inconsistency between these accounts; both traditions may be equally true. While the King of Caledonia would learn, from a fresh and prevalent tradition of his subjects, in what manner the King of Morven was wont to hunt the deer, and had seen the paths and enclosures which were used for that purpose, it is not at all improbable, that he would follow the example, and improve upon the plan of his renowned predecessor, not more so, than that the roads in the Highlands and elsewhere are larger and better at this day, than they were one or several centuries ago.

THE CAIRNS IN THE FIRTH OF BEAULY,

Are very singular, and merit a place among the antiquities of the county of Inverness. Two are much larger than the rest; one of these is opposite to Redcastle, and the other about two miles above the ferry of Kessack, and are said to be distinctly seen above the surface of the sea, during low water in neap tides. In some of these, which are accessible, beams of wood have been found; in others, graves and human bones have been discovered occasionally; which leaves no doubt of their having been in former ages used as habitations both for the living and for the dead; and consequently, of their being at that period dry ground. The most material circumstance, worthy of investigation is, why the good people of that country made choice in those days, of such inconvenient dwellings for themselves, or of such repositories to contain the bones of their departed friends? and why the sea covers this

this burying ground at present, which we may presume was not the case at that time, owing to the reluctance of all men at a watery grave?

In many islands, we meet with the ruins of places of strength, some more, others less entire; and in not a few instances, they are fallen so much to decay for want of cement, that they exhibit no other appearance but great cairns, or prodigious collections of loose stones. In constructing these dwellings on low islands, men could have raised them so high, as not to be in danger from the water, which could not be done with graves.

When bears and wolves, which delighted in devouring human flesh, were prowling about, in every corner of this country, the inhabitants were so much shocked at finding the bodies of their dead friends dug up and devoured by these ravenous beasts, that they used every precaution to secure the cemeteries from depredation. Hence the practice of covering the graves with large and heavy flags; hence also, the general practice of building churches, and of making church-yards in islands, if they could be had, where the ashes of the dead might rest in peace.

But how comes it to pass, that this burying ground is at present covered occasionally with water? The only solution of this difficulty, that occurs, is what has been stated in the beginning of this Report, in the Chapter on different kinds of soil, relative to the progressive increase of bars, which are gradually, but incessantly, formed by powerful streams, where they fall into other bodies of still water. At the ferry of Kes-sack, a headland of this kind has been produced by the river Ness; and by its resistance, the surface of the firth of Beaully must have been raised higher than it

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was at a very remote period, to an altitude corresponding exactly to the height of the fall at the current in that ferry. This elevation of the upper firth above that below, is also increased relatively, by the vast body of fresh water added to it from the river Beaully and others, which, during one reflux of the tide, has not time to be discharged in the narrow outlet now formed at Kessack. But when there was no contraction of the channel, and no fall at Kessack, these cairns may have appeared at all times above water; which we must presume was at least the case, with those, where human bodies were interred; and we may venture to conclude, that their tops are now occasionally as far below the surface of the firth of Beaully, as the height of the fall, at the lower extremity of that firth.

We need by no means be surprised at this circumstance, because it is found in many parts of the world, no less than in the firth of Beaully, that large mediterranean bodies of water, whether salt or fresh, whose outlets are contracted, have actually risen above their former level, in proportion to that contraction. This is the reason, which makes all lakes of considerable size swell the rivers that flow from them, during a few days, after the brooks that filled them had fallen low; and if the contraction at the mouth were increasing, and the intervals of discharging themselves were as short as the reflux of one tide, while the filling above was continued without intermission, the consequence must be, that any great body of water, in these circumstances, must acquire *more altitude gradually, though insensibly increasing.*

No. VII.

ECCLESIASTICAL ANTIQUITIES OF INVERNESS-SHIRE.

THERE WAS a convent of the order of Dominicans at Inverness, founded by Alexander II. in the year 1233. King David II. upon the 20th of April, and in the 30th year of his reign, confirmed to them *Decem libras Sterlingorum in ditationem ecclesiæ suæ, annuatim percipiendas de firmis dicti Burgi*, which had been given to them by his father, upon the 21st of October, in the eighth year of his reign.

In the parish of Kirkhill, at the mouth of the river Beaul, stood the town and port of Lovat, anciently the seat of the Bissets of Lovat, which was called *Prioratus de bello loco*, and was founded in 1230, by James Bisset, a gentleman of considerable property in that country.—The terms of its foundation were, “*ut pro ipso, dum viveret, orarent monachi; post mortem, funus corpusque exciperent, atque animam de corpore abeuntem per continua sacrificia et opera pietatis prosequerenter.*” Bisset’s charter is confirmed by Pope Gregory, *tertio nonas Julii, et pontificatus sui anno quarto.*

“Andrew, Bishop of Murray, ratifies to the Monks of Beaulieu, their titles and fishings upon Spey; as also the tiend sheaves of the parish of Abertarf, granted formerly to them by William Bisset, Knight.”

This charter is subscribed by fifteen Canons of the church of Murray. The church of Conwath belonged also to this place. Robert Reid, Bishop of Orkney, was commendator thereof in 1535.

After the Reformation, Walter, Abbot of Kinloss, and Prior of Beaully, gave a tack of some lands, belonging to the monastery, to John and Alexander Clark, which is dated 19th November, 1568. At the dissolution of the monasteries, Hugh Lord Fraser of Lovat acquired this priory from the last Prior thereof, and transmitted it to his posterity, with whom it remains.

Kingussie, in Badenoch, was a priory, founded by George Earl of Huntly, about the year 1490; but it is not ascertained of what order the monks were, nor what were their revenues. The lands, however, belonging to Kingussie, were a donation of the family of Huntly, and at the Reformation were resumed by that family.

No. VIII.

ON THE IMPROVEMENT OF MOSS LANDS.

BY SIR JOHN SINCLAIR, BART. M. P. PRESIDENT OF
THE BOARD OF AGRICULTURE.

It is particularly to be observed, that exposing a moss soil to the influence of the sun, or ploughing it during the summer season, does mischief, drying up its moisture, and changing it into peat for fuel, after which it is almost proof against the effects of frost; whereas, the more it can be exposed to frost, the better; as it is thus changed from *quick*, into *dead* moss, and fertilized at the same time. Hence it appears, that the mosses, which are so gloomy and so unpleasant to look at, in their original state, and the abundance of frost, which

so many object to in the climate of Scotland, may become sources of fertility and riches.

Preparation.—Begin with draining the land, so as to put it in a state fit for being ploughed, without rendering it at the same time too dry. Burn the heather; then make use of the fen-ploughs for paring the surface. What is pared off, may either be made into turf walls, for sheltering the ground, or employed to fill up the hollows, or burnt, though the ashes of the surface are in general so light, as to be of very little service as a manure. When the surface is cleared, then take a common Scots plough, and during the months of September and October, and all the winter months, whilst it is practicable, plough the moss from six to nine inches deep, exposing it as much as possible to the frost. The frequent use of the roller (and the heavier the better), is of the greatest importance in the cultivation of moss, rendering it much sooner capable of producing abundant crops of grain or grass, than otherwise could be expected, and effectually banishing that noxious weed *sorrel*, with which it is otherwise apt to be overspread.

Manure.—In the following spring, the land thus prepared, will be fertilized by the frost, and easily converted by harrowing, into mould, or what Dr. Anderson calls moss-earth. If any clods are to be found in a rough state, they ought to be burnt; and, if the season is dry, fire may be spread over the surface, the ashes immediately harrowed in, and the ground sown. Dung, lime, clay, sand, or small gravel, may also be employed for manure, as circumstances will admit of it.

Crops.—Bear seems to thrive on lands thus prepared.

pared. Oats also would answer well. Rye would probably succeed. Rape would certainly be productive. Red clover has not yet answered, but will most probably succeed, when the lands have been longer under cultivation. Rye-grass, and the grass called *Yorkshire fog*, seem to answer particularly well. It would be a most important public object, if hemp would thrive on such soils.

Succession of Crops.—It has not yet been ascertained by experience, what is the best succession of crops, in such lands; but the great object certainly is, to get them laid down into grass as quickly as possible. They can then be broken up with the fen-plough, the surface burnt, and the quantity of rich ashes, which the roots of the grass will produce, will ensure a succession of abundant crops, three at least, of which two may be of grain, and with the last crop of grain, the land may be again laid down to grass.

There is every reason to believe, that by following such a system, the extensive bogs in England, Scotland, and Ireland, may be rendered fertile, and a great addition made to the wealth of the country, and the subsistence of its inhabitants.

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